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LETTER

FROM

THE SECRETARY OF WAR,

514-48

TRANSMITTING

LETTER OF THE CHIEF SIGNAL OFFICER

ON THE

RAIN-FALL OF THE PACIFIC SLOPE AND THE WESTERN STATES AND TERRITORIES.

FEBRUARY 27, 1888.—Ordered to be printed and laid upon the table.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1888.

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Letter of the Chief Signal Officer on the rain-fall of the Pacific Slope and the Western States and Territories.

FEBRUARY 27, 1888.—Ordered to be printed and laid upon the table.

LETTER OF TRANSMITTAL.

WAR DEPARTMENT,
Washington City, February 24, 1888.

The Secretary of War has the honor to transmit to the United States Senate a report of the 18th instant and accompanying charts, together with corresponding data, from the Chief Signal Officer of the Army, showing the maximum annual, the minimum annual, and the mean precipitation for each month of the year (all in rain-fall or melted snow) for Washington Territory, Oregon, Colorado, Idaho, Nevada, Utah, Arizona, California, Wyoming, New Mexico, Indian Territory, and Texas; the same being transmitted in response to Senate resolution of the 4th ultimo, directing the Chief Signal Officer to furnish the Senate with the charts and tables of rain-fall on the Pacific coast, and any report made thereon by any officer of the Signal Corps, and also similar data and information touching the same subject-matter in New Mexico, Texas, and Arizona, so far as obtained; and to express his views of the importance and value thereof.

WILLIAM C. ENDICOTT,
Secretary of War.

The PRESIDENT PRO TEMPORE UNITED STATES SENATE.

RAIN-FALL OF THE PACIFIC SLOPE AND THE WESTERN STATES AND TERRITORIES.

SIGNAL OFFICE, WAR DEPARTMENT,
Washington City, February 18, 1888.

SIR: In compliance with the resolution of the Senate, dated January 4, 1888, I have the honor to herewith transmit fifteen charts, with corresponding data, showing the maximum annual, the minimum annual, and the mean precipitation for each month of the year (all in rain-fall or melted snow) for Washington Territory, Oregon, California, Idaho, Nevada, Utah, Arizona, Colorado, Wyoming, New Mexico, Indian Territory, and Texas.

Accompanying these charts is also a report of Second Lieut. W. A. Glassford, Signal Corps, bearing upon this subject. Lieutenant Glassford transmitted with his report, data from 372 stations, collated from Schott's Rain-fall Tables from the collection by Mr. Hall, the State engineer of California, from Signal Service reports, and obtained from voluntary observers in California and Oregon. Rain-fall data for 289 new stations have been added to these, while the data for the 372 stations have been largely supplemented, so that these charts and tables show, in the fullest and most accurate manner, all that is now known of the rain-fall in these twelve States and Territories.

Since over 80 per cent. of Lieutenant Glassford's original data has been modified by more or less material additions, and has been increased over 75 per cent. from the records of this office, it followed that his original charts were not satisfactory, as they did not cover a part of the new territory, and did not, with entire accuracy, show the conditions in the old territory. His charts have consequently been replaced by others deduced from the entire mass of accumulated rain-fall. The report of Lieutenant Glassford is submitted to the Senate exactly as it was received from that officer, and any very slight discrepancy which may exist between the text and charts may be attributed to the fact that Lieutenant Glassford was not in possession of much of the information now for the first time available.

Every source has been exhausted in the preparation of these data, which in most cases has been brought down to the 31st day of December, 1887. While the data from several of these Territories was not positively called for by the terms of the resolution, yet, in order to correctly draw the lines of equal rain-fall and to intelligently and properly show the relations of the Texas rain-fall to that of Arizona and the Pacific region, it was necessary to fill in the data for the intervening regions of Idaho, Colorado, Nevada, Utah, Wyoming, and Indian Territory.

The charts show separately the mean rain-fall for each month and the year, besides indicating the maximum and minimum amount which has ever fallen in any year, as shown by the records of the various stations.

The following table shows the number of stations, together with the entire and average length of records for each State and Territory:

State or Territory.	Number of stations.	Total length for all stations in State.	Average length of record for each station.
		Yrs. Mos.	*Yrs. Mos.*
Arizona	40	295 8	7 5
California	270	2,395 6	8 11.9
Colorado	48	156 9	3 3
Idaho	10	62 11	6 4
Indian Territory	8	101 0	12 8
Nevada	30	171 10	5 9
New Mexico	30	234 9	7 10
Oregon	38	214 1	5 8
Texas	121	650 10	5 5
Utah	22	221 10	10 1
Washington	32	177 2	5 6
Wyoming	12	116 2	9 8
Total	661	4,798 6	
Average			7 3

The record aggregates 4,800 years for the 661 stations, giving an unexpected high average of seven years and three months to each station. It must be understood that the separate records vary, however, from two to forty years in length, and that it is impossible to determine with accuracy how far observations, even for long periods from the same station, are comparable. In charting the data upon the map, it was the original intention of the Chief Signal Officer to give greater weight to stations having the longer records; but unexpectedly it appeared that records of shorter length coincided very closely with the data from circumadjacent stations, so that it was deemed advisable to give almost equal weight to all records. While this might be considered a fault in some cases, yet it can hardly be thought so under these circumstances where the complete data has been in the hands of the Chief Signal Officer but less than a week, while the exact data on which the lines were drawn accompany the maps in the inclosed tables. The Chief Signal Officer in charting the data also refrained from drawing lines which had as a basis the topographical features of the country. While it is evident to him that the rain-fall of this region depends largely on the configuration of the country and on the elevation of the station, as compared with the average height of the surrounding country, yet he has not deemed it proper in documents of such great importance to substitute estimated value dependent on his personal and scientific opinions, for which data is wanting in certain extensive areas. Such a procedure on his part would have slightly changed some of these lines, which have now been drawn as accurately and faithfully as possible under a strict law of exact interpolation for regions with few rain-fall stations, and he believes that such a course will commend itself to practical men generally, since it gives the fullest weight to actual observations.

Moreover, if the lines do not seem satisfactory to meteorological students, the data are available from which to draw lines of rain-fall, modified according to their personal opinions as to the effect of forests, mountain ranges, valleys, and sandy waste.

The twelve States and Territories covered by these charts comprise nearly one-half the area of the United States (excluding Alaska), and to the inhabitants of each and all of them the question of rain-fall is one of the greatest interest and importance. But apart from the practical value which these data have for the four millions of people inhabiting these districts must be added the interests of the future millions who ultimately will settle in the so-called arid and subhumid regions. Private enterprise has wrought great changes in the West, but the day is fast approaching when the General Government will be obliged to define not only its general policy regarding the forests and rivers of this vast inland empire, but also pass upon the interstate question of irrigation, even if it does not give direct countenance and aid to this powerful means of increasing a thousand-fold the present value of many millions of acres of unwatered land.

The Chief Signal Officer, without desiring in any way to enhance or exaggerate the importance of work collated through his subordinates, can not refrain from expressing the opinion that

without such data neither can Congress wisely legislate concerning the varied interests of the Territories, nor can the business enterprise of individuals or corporations safely and economically work out grand results for the arid regions without the data contained in these tables and charted on these maps.

The Chief Signal Officer is asked in terms by the resolution to express his views of the importance and value of these charts and tables, and also, inferentially, to express his opinion on the question of recurring droughts in Texas, and in relation to the vexed question of increasing or decreasing rain-fall in the arid or subhumid regions of the United States.

One other great result which must redound to the benefit of the trans-Mississippi and trans-Missouri country by the publication of these official data, will be the dispelling of erroneous and injurious impressions which have long prevailed regarding this extensive region. In the early century this territory was viewed as hardly suited for civilized man; its enormous plains and vast mountains being represented as arid and desert regions, unsuited for cultivation, and in many places, even unfit for pasturage. Adventure, exploration, and circumstance have pushed the frontier westward until the myths of the Great American Desert to the north and of the rainless "staked plains" to the south have practically disappeared. It is none the less true, however, that the latest and most reliable American text-book of meteorology of this country speaks of the areas "between the Sierra Nevadas and the Rocky Mountains, including portions of Utah, New Mexico and California," as "a region which is almost entirely destitute of rain," and that further on the east side of the Rocky Mountains "the country is a barren desert, almost without rain."

As to the value of these charts, there should exist no reasonable doubt, since they not only show prospective settlers in these States and Territories the probable rain-fall conditions, but likewise show it to parties contemplating industrial, agricultural, stock, and other investments in these extensive regions. It is evident to all, however, that the rain-fall conditions for separate years vary quite considerably, and, indeed, the opinion has been put forth that these variations are not only enormous, but are so irregular as to render their prediction impracticable, and even that rain does not fall for years in certain sections.

An examination of the charts of maximum annual rain-fall and minimum annual rain-fall of these regions, as presented herewith, show clearly that rain-fall conditions are considerably more equable than has been generally believed, so that the isohyetal lines are quite as regular on these charts of maxima and minima conditions as on those of average conditions. The minimum rain-fall has never reached zero for any year, and annual or seasonal rain-falls less than one inch have occurred in southwestern California and southwestern Arizona at few stations only. These maps of maxima and minima precipitation must be of great practical value as showing the settler or investor exactly the extreme conditions which he must expect to experience in these regions.

Another great value of the charts is the bringing to general attention and consideration very extensive areas of country in what has been known as the arid region, where late and careful observations have shown the rain-fall to be far greater than has been usually attributed, and thus transfer these areas to the subhumid districts.

The great extent to which misapprehension as to the rain-fall conditions of the arid regions has been corrected by these charts is evidenced by the fact that the area on which the mean annual rain-fall is less than 10 inches, shown on statistical maps of the tenth census at 241,000 square miles, has been reduced to 126,000 square miles, while a similar reduction is shown in the area of country where the yearly rain-fall is between 10 and 15 inches, which, given in the census chart at 385,000 square miles, is now limited to 259,000 square miles. In other words, the area over which less than 15 inches of rain falls annually has been reduced almost a quarter of a million (241,000) square miles. A large area of country charted on the statistical map as having an average rain-fall of less than 5 inches now entirely disappears in Texas, New Mexico, Utah, and Oregon, and is very materially reduced in Nevada, Arizona, and California.

Observations over a small, compact agricultural area of South Australia affords very reliable data as to the effect of rain-fall upon annual wheat yields. It appears from these observations that 12 inches of rain in the six winter months produces 6 bushels of wheat per acre, and that for every increase of rain-fall of an inch a like increase occurs in the average production of bushels

of wheat per acre. The effect of the extra rain in the season over the small area of South Australian wheat lands would give an additional fee-simple value of £10,000,000.

The importance of information as to the rain-fall conditions of the arid regions must increase steadily as time goes on, and the Eastern States become gradually filled with a more or less dense population. As has been pointed out by the Director of the Geological Survey, the arid region of the United States includes more than four-tenths of the entire country, excluding Alaska. It is believed that the accomplished Director unintentionally overstated the case when he advanced the idea that those regions should be classed as arid or incapable of successful agriculture without irrigation where the rain-fall is less than 20 inches annually. The statements put forth by him that with 20 inches agriculture will suffer drought, and will be fruitless many seasons in a long series, is equally true of regions over which as much as 25 or 30 inches fall annually. Indeed, during this very year sections of the country where the annual rain-fall ranged from 30 to 50 inches have been visited by a most serious and protracted drought, which proved most disastrous to agricultural and other kindred interests.

The point at which a region may be classed as arid and unfit for successful irrigation should be lowered, it is believed, to 15 inches. The Chief Signal Officer does not assert that this amount of annual rain-fall will be sufficient for all crops, nor on all kinds of soil, and at every elevation. Latitude, elevation, equable distribution of rain-fall, humidity, soil—all these are conditions which must be important factors in the problem. Exact observations upon these points are lacking in the United States, but in Australia observations and experiments have been made, covering now quite a number of years, on wheat (and this may be called a test crop).

The fact that wheat can be grown without irrigation in a country where the annual rain-fall is less than 20 inches is evidenced by official statistics from Dakota, which show that wheat is grown by tens of millions of bushels yearly in sections where the rain-fall ranges from 20 inches downward. Indeed, the arid region limit based on 15 inches mean annual rain-fall is a most reliable one in that region, as is evidenced by the fact that over 3,000,000 bushels of wheat are now grown annually in counties where the rain-fall ranges from 15.1 down to 13.8. (See "Resources of Dakota, 1887," an official publication.)

The report of Major Powell states that in Utah less than 3 per cent. of its lands can be cultivated by irrigation. Thirty years since it was argued that the prevalence of alkaline matter in the soils rendered it evident that the whole country was worthless for agricultural purposes, even if sufficient rain-fall prevailed, or water for irrigation was available. Experience has shown the fallacy of this statement, and it is now admitted that with water the greater part of the plateau lands are suited for cultivation. It is evident that a certain degree of elevation marks the limit of successful agriculture. But in certain portions of the arid regions, owing to the very high summer temperatures, it is probable that the summer heats raise the limit of elevation for such crops as can be developed and ripened in a few months.

Perhaps the most careful observations in connection with the effect of rain-fall upon pasturage have been made in Australia, the question being very important, owing to the immense arid regions in that country. It has been set forth, and probably with a fair degree of authority, that annual rain-fall is a most reliable index as to the pastoral capacity of a country, since grass benefits by rain at any season, although it is not to be denied that a more equable distribution throughout the year is much better than an unequal one.

Australian records show that in that climate land favored with less than 10 inches of rain a year is quite valueless without irrigation. The truth of this remark is borne out in a measure by the uplands of Castile, Spain, which, the average rain-fall being less than 10 inches a year, are of but little value. In Australia the small pastoral capacity of an arid region is shown by the fact that up to 10 inches only one sheep per square mile can be carried for each inch of rain-fall. From 9 to 13 inches, however, the increase is about twenty sheep a square mile, and for the remaining 7 to 20 inches of rain-fall the increased carrying capacity is about seventy sheep per square mile.

It has been estimated that the sandy land in the San Joaquin Valley, California, would feed about one sheep to the acre in the natural state, but when irrigated and growing alfalfa it carries twenty.

The statement put forth by the Director of the Geological Survey that over 20 inches of rain-fall is necessary for the growth of forests is probably correct, and, the conditions of temperature and soil being constant, the extreme limit of the timber regions would not differ materially from the mean rain-fall line of 20 inches; but, as is well known, the timber regions have been materially reduced in area by fire. From this cause not only have these regions suffered where timber would grow freely, but the bordering line of debatable land has naturally lost all its timber; and, moreover, it is most probable that the destruction of scattered and stunted bits of outlying forests has of itself tended to still more restrict the general area of the forest regions.

The effect of forests as factors in the increase of rain-fall is more or less questioned, but the weight of opinion and of accumulative evidence tends to confirm the theory that forests do slightly increase the mean rain-fall. The confining of Indians to reservations has removed one fruitful cause of fires during the last ten years, so that the stunted forests are having an opportunity of increasing the limit only by the operation of natural laws. The immense number of planted and cultivated trees over the great plains of Kansas and Nebraska will undoubtedly contribute their part in the coming years toward the increase of rain-fall, and, what is more important, its substantial retention in the soil and more slow and equal distribution than was possible when the same amount of rain fell upon a hardened, open prairie, and, without the intervention of loosened soil and vegetation, drained at once as torrents into the beds of the nearest water-courses.

The question of irrigation is rightly deemed in the arid regions as being of the greatest importance to the general welfare, so that the subject of water-rights has claimed early attention in these Territories. In New Mexico, for instance, water for irrigation has an absolute right of way, and no work of human hands is allowed to obstruct its free flow, while all rivers and streams are declared public acequias or irrigating canals. Since, however, the land to be irrigated exceeds the capacity of the water, disputes in the future must become more frequent as to the division of these water-rights, since from time to time much land which has received a bountiful supply of water will find this quantity seriously diminished, or totally cut off, as other irrigable land is put under cultivation nearer the source of supply. It is understood that more or less complaint has already been made by the settlers in the lower valley of the Platte that the quantity of water which formerly came to them from the upper valley, which is in another State, has been materially reduced, to the serious detriment of the settlers in the lower valley. It may be put forth as a reasonable opinion that each State is entitled, for agricultural purposes, to so much rain-fall as naturally falls upon its agricultural lands, while the amount which falls in uncultivated regions might be subject to other rules as to its general and equable distribution. In any event, this may become an important question, for such people of Nebraska, for instance, as depend upon irrigation in their agriculture, when later the valleys of Wyoming and Colorado shall be put under the fullest possible cultivation.

The question, then, assumes a magnitude far greater than is usually assigned to it, affecting as it does the future agricultural interests of one-third of the area of the United States. This question, which concerns the interests of millions of people, can not be satisfactorily discussed and arranged without a knowledge of the mean annual rain-fall which falls over the area of each particular drainage basin.

The extreme value in the arid region of every inch of rain-fall can hardly be appreciated by the population of well-watered countries. Since this is a question which affects four-tenths of the area of the United States, there seems no doubt but in the future the interests of such an enormous area will concur in urging upon Congress the question of State-control irrigation. In one of the governments of that country which most resembles the United States (Australia) this policy has lately been taken—by the government of Victoria. In Spain it is calculated that every five inches of rain-fall that can be collected off a given catchment area and brought to market is worth the same area of first-class irrigable but unirrigated land. The question which may arise between Nebraska and the Territories comprising the headwaters of the Platte has already greatly excited the public mind in Australia on the question as to whether South Australia has any right to have water flowing in the Lower Murray.

It is to be borne in mind that the rain-fall of the arid regions depends almost entirely upon accidental or cyclonic disturbances, and not (as in some parts of the world) on steady, prevailing winds which change at stated periods of the year. It thus follows that the rain at stations throughout these districts is simply the deposition of moisture in the shape of rain or snow, through the cooling of the air drawn by cyclonic disturbances from the elevation of the sea to high altitudes.

It occasionally happens, however, that from violent atmospheric disturbances (which, although largely local, have a definite relation to the general atmospheric conditions) the entire, or nearly the entire, amount of moisture of the air is suddenly condensed and precipitated in the shape of enormous quantities of water known as cloud-bursts. The general rain-fall, nevertheless, as has been before stated, depends upon condensation through the cold of elevation, and it is probable that the maximum rain-fall on mountain slopes, or rapidly rising grounds, is at an elevation of about 3,000 feet, as in Europe. In consequence of this fact the elevations of the stations have been given as far as practicable without too long delaying these data. Such reductions as a more elaborate treatment of the subject may demand can be made by parties discussing data pertaining to stations much above the elevation of the adjacent country.

To the wise provision and careful attention of the directors of the Central Pacific Railway a very large number of the observations here given are due; but this railway line naturally runs through the lowest plateaus and passes of Utah, Nevada, and California, where the rain-fall is the least. In consequence of this fact, it is tolerably safe to assume that the data from isolated stations of quite high elevation, which tend to show large rain-falls, do not entirely counterbalance the large number of small rain-falls over the country of least elevation, and that the average rain-fall through the arid region, as shown by these maps, is really less than the average amount which actually falls over the entire region.

It is well known that enormous quantities of water occasionally fall in these arid regions, the phenomena being known as cloud-bursts. These downpours of rain, while injurious and even destructive at the time, yet being taken up by the earth, they serve usefully later as a water supply, through the medium of rivers, artesian wells, or springs. The quantities which fall in a single cloud-burst can not be calculated, but the amount can be expressed by no other word than enormous. In southeastern California, in the desert country, where it has been said that no rain falls, one cloud-burst was of such extent that, although the country was nearly level, yet water fell in such enormous quantities that over a quarter of a mile of the Southern Pacific Railroad was completely swept away, and other portions of the track submerged and damaged. It is to be noted, also, that this quantity of rain fell during one of the dry months, when the rain-map showed for southern California only .01 or .02 inch of rain, barely enough to moisten the surface of the sandy desert.

That this is not a solitary case of exceedingly high precipitation in the arid region at points where no rain-fall stations are located is well known to meteorological students; as among other instances may be quoted August 26, near Hays City, Kans., and on same date near Kanab, Utah, and five days later near Coalville, Utah, the cloud-burst causing a solid bank of water between 3 and 4 feet high.

February 17, 1878, Comanche, Calaveras County, Cal., causing a bank of water several feet in height, and covering the entire slopes of hills with torrents of water.

August 8, 1881, Central City, Gilpin County, Cal., causing a wall of water from 4 to 6 feet deep through the leading street.

August 14, 1881, 60 miles south of station on American Fork Cañon, Utah, carrying away houses and trees.

August 6, 1881, Wickenburg, Ariz., in five hours the river, being perfectly dry, became a mile wide and from 2 to 15 feet deep, with a current of 10 miles per hour.

June 7, 1884, near Helena, Mont., and June 22, 1884, another near Helena, Mont., with a wall of water 8 feet deep.

June 10, 1884, in Humboldt County, Nev., to such an extent that the Central Pacific Railroad track was badly washed in places a distance of 30 miles.

Rio Grande City, Tex., May, 1885, 3 inches of rain in one hour at station, and in eleven hours the Rio Grande River rose 20 feet, extending its width from 100 yards to 5 miles. This excessive precipitation was comparatively local, for the river fell immediately afterward.

Near Montrose, Colo., May 17, 1885, and Indiana, Red Willow County, Nebr., May 26, 1885, flooding Richmond Cañon to 15 feet deep, and drowning a party camped in the Cañon.

On the divide south of Denver, Colo., July 25, 1885, a most remarkable cloud-burst, doing immense damage.

These cases might be multiplied, but enough has been given to accentuate the fact that the wide distribution and tolerably frequent occurrence of these cloud-bursts must so add to the water falling on the arid regions as to make the supply vastly greater for irrigating and other purposes, through the media of springs, streams, and wells, than these charts set forth.

The Chief Signal Officer puts it forward as his opinion that when Idaho, Nevada, Utah, New Mexico, and Arizona shall have been covered with rain-gauges as completely as New York or New England, the final outcome of observation will indicate that actual average of rain-fall for this arid region is now understated by the census charts from 20 to 40 and by these from 10 to 15 per cent.

The question of increasing rain-fall in the Great Interior Basin seems to be satisfactorily settled as far as the catchment basin of Great Salt Lake is concerned. The systematic and careful observations made by Prof. G. K. Gilbert, of the Geological Survey, supplemented by other data for the past forty years, which he has collated and sifted, gives with tolerable accuracy the level of the Great Salt Lake, which serves as a reservoir for probably two-thirds of the entire territory of Utah, as well as for a considerable portion of Idaho. A chart kindly furnished by Professor Gilbert shows that Salt Lake fell from 1845 to 1849; rose to 1856, fell to 1860; rose to 1873, and fell, with a slight interruption, until 1884, and rose until 1886, since which time it has a slightly falling tendency. It is significant that while the first two minima were substantially the same in 1849 and 1860, yet the minimum of 1884 is at about the same height as the maximum of 1856, and is over a foot above the maximum of 1845. As the country adjacent to the lake is substantially level, it follows that any increase in the height of the water must be most gradual, since the area of the lake, and consequently the evaporating surface of water, is largely increased. This consideration would not be so important in some portions of the United States, but in a region where the annual evaporation can not be far from 6 or 7 feet, it is a very pertinent fact.

The changes in the level of Salt Lake are perhaps best shown by five-year periods, beginning with 1845. The elevation above zero (lowest water-level) for five-year periods is as follows:

	Feet.
1845 to 1849	2.1
1850 to 1854	3.4
1855 to 1859	5.2
1860 to 1864	3.6
1865 to 1869	9.6
1870 to 1874	12 6
1875 to 1879	11.5
1880 to 1884	6.4
1885 to 1887	8.2

It is a significant fact, which may, however, be overrated, that the greatest and most rapid rise of the water of Salt Lake occurred between the years 1862 and 1870; that is to say, during the period when the amount of land being brought under cultivation and the quantity of vegetation and the number of trees was most largely increasing. This increase of height in Great Salt Lake continued, too, despite the fact that irrigating canals were being brought into extensive use, so that large quantities of water which otherwise would have run into the lake were diverted to watering the irrigable lands and was absorbed by the soil or evaporated in the dry air of that region.

The rain-fall records of Salt Lake City and Camp Douglas are, unfortunately, too broken and unsatisfactory to show the exact relations of the rain-fall to the rising lake. It has, however, been stated that after 1860 a number of creeks which ran dry in summer commenced to furnish water the whole year round. The Chief Signal Officer of the Army, when serving at Salt Lake in 1867, was informed by old settlers that the name "New Creek," which was then given to the creek run-

ning through Camp Douglas, was so applied because the creek, which had never given water except during the spring freshets from the melting snow, had become a permanent stream winter and summer.

In connection with this question of secular variation and increase in rain-fall comes up also the problem as to whether forests have any effect upon rain-fall. As stated previously, the Chief Signal Officer has no doubt of the valuable services rendered to agriculture and other interests by the slow, equable, and gradual distribution of water through the medium of forests. In a recent article upon the Yellow Stone Park as a forest reservation Prof. Arnold Hague, U. S. Geological Survey, urges the value of forests as a protecting influence for the country comprised in the lower drainage basins of rivers. He says:

> In an arid and sparsely timbered country, and one of unequally distributed rain-fall, forest and moisture maintain reciprocal relations. Experience has shown in Europe, and unfortunately already in America, the injurious effect of disafforesting a country near the headwaters of large rivers. One instance will suffice to illustrate this protecting influence of the forest. The report of the recent forestry commission of the State of New York says, speaking of the resources of the Hudson River, that the summer flow of the Adirondack rivers has decreased within the memory of men now living from 30 to 50 per cent. Many of the small streams which a quarter of a century ago were abundantly supplied with water during the entire summer are now dry during many months.
>
> Remove the forests from the sources of the Yellowstone and Snake, and the regio . will become a barren waste. The snows under the scorching rays of the sun would rapidly disappear, and early spring freshets and floods, carrying devastation before them, would strip the rocks bare of the meager soil with which they are now covered. Under the influence of the forests the soil and vegetation are protected, which in turn act as a sponge, regulating the flow and supplying the springs and streams. The climatic benefits derived from this forest-protected region can scarcely be overestimated. From the cool, wet surface of the broad store-house of water, the dry winds coming from the west absorb immense quantities of moisture, which is again precipitated over the agricultural and grazing lands to the eastward. Not only should the present reservation be carefully guarded, but the area of the park should be enlarged to the east and south, so as to take in a dense forest region useless for agricultural purposes and destitute of mining resources.

The Chief Signal Officer concurs with Professor Hague in the opinions here advanced, and also is of the opinion that extensive forests slightly increase the rain-fall of any country, although not to such an extent as is advanced by many.

Mr. Henry F. Blanford, the able and experienced meteorological reporter to the government of India, one of the most reliable authorities on meteorological subjects, dwelt somewhat, in his last report (1885–'86), upon the effect of forests upon rain-fall. He believes that the observations in India show a slightly larger rain fall in forests than without, and that the obvious inference to be drawn from the tabulated data is that the existence of forests increases the rain-fall. While admitting that the present evidence is not entirely conclusive, yet he expresses the opinion that the certainty of this tendency will be further confirmed by future experience. The most striking instance of apparent increase of rain-fall owing to forest production refers to the Central Provinces of India, where the rain-fall average for the past eleven years is considerably larger than when obtained from a longer period. In investigating the cause of this change the fact was developed that "extensive tracts of forests, previously devastated by jungle fires with a view to the nomadic system of cultivation practiced by the hill tribes, had been brought under protection in 1875, and that thereby the area of vigorous forest growth had been enormously increased." It appears from extended observations in India that the probable error of mean rain-fall derived from ten years' observations is but 5 per cent., while the increase in this case was 10 per cent. Admitting that 5 per cent. was due to the error in the ten-year mean, it appears that an equal amount must be attributed to some local cause; and while the conservation of the forests is not positively shown to be this cause, yet this accumulating evidence is of marked importance in relation to this subject.

The secular variation of rain-fall, as has been set forth by many writers, may be considered as undoubted; but as to whether it follows any known or definite law is very much to be questioned; since, although a succession of dry years follow each other, which are succeeded by others about the mean, and then again by a succession of wet years, yet it does not need a very elaborate comparison to show that excesses of rain prevail in a given year in one section of the country while deficiencies occur in the same year in others.

As regards this increase, it is apparent that the question can not be determined by the records of the Great West, since they are not of sufficient length, nor have they been sufficiently continuous, nor

even made under absolutely the same conditions. Differences of methods and instruments may cause but slight discrepancies, but differences of condition as regards exposure, when supplemented—as they certainly have been in many cases—by the neglect of the observer to note observations which have been missed, render examination of any single record of but little value. The Chief Signal Officer has examined such records as from their length, continuity, and relation to the arid or subhumid regions, might be of value in solving this question. The method adopted is open to objections, but no simple and better one seemed to present itself. The method consists simply in dividing the entire record into two equal periods and comparing the average annual rain-fall for the first half with the latter. Where the record is continuous and comparable the results would be affected only by the secular variation, which in very long periods would substantially disappear. But in cases of interrupted records the values obtained can be deemed neither as valuable nor as reliable as those of a consecutive series.

The record (continuous) at Austin, Tex., covers thirty-two years; the mean rain-fall during the last sixteen years is 5.1 inches greater than the first sixteen.

The record (interrupted) at Ringgold Barracks, Tex., covers twenty-seven years; the mean for the first thirteen and one-half years is 2.1 inches greater than the last half.

The record at Fort Bliss (and El Paso), Tex., for twenty-three years: First eleven and one-half years 3.1 inches smaller than the last half.

The record (interrupted) at Camp McDermit, Nev., covers eighteen years; the mean during the last half is 8.1 inches greater than the first. Over half of the great excess depends on two years.

The record (continuous) at Camp Bidwell, Cal., covers twenty-one years; the mean during the last half is 1 inch greater than the first, from *calendar* year, and 0.8 inch for the *seasonal* year.

The record (interrupted) at Camp Gaston, Cal., covers twenty-four years; the mean during the last half is about 1 inch greater than in the first.

The record (interrupted) at Fort Union, N. Mex., covers twenty-eight years; the rain-fall during the first half was about 0.8 inch greater than the last half. The whole excess is due to the two months in a single year, which observations Schott considers doubtful.

The record (badly interrupted) at Santa Fé, N. Mex., covers thirty years; the mean during the first half being about 0.5 inch higher than the last half.

The record (interrupted) at Fort Gibson, Ind. T., covers thirty-two years, the rain-fall being 1 inch greater the last half than the first.

The record (interrupted) at Fort Boisé, Idaho, covers twenty-one years; the mean of the first half is about 1 inch higher than the last half, but the entire excess occurred in one year.

The record (interrupted) at Fort Lapwai, Idaho, covers eighteen years; the mean during the last is 4.3 inches higher than the first.

The record (continuous) at Scott Valley, Cal., covers twenty-seven years; the mean during the last half is 2.6 inches higher than the first half.

The record (interrupted) at Fort Yuma, Cal., covers thirty years; the mean of the first half is about 0.5 inch less than the last half.

The record (interrupted) at San Diego, Cal., covers twenty-four years; the mean during the last half is 1.5 inches higher than the first half.

The record (continuous) at Sacramento, Cal., covers forty years; the seasonal mean during the last half is 0.5 inch less than the first half; the calendar mean 0.1 less.

The record (interrupted) at Stockton, Cal., covers twenty-four years; the calendar mean for the first half is 0.1 inch less than for the last half.

The record (continuous) at Camp McDowell, Ariz., covers twenty years; the mean for the first half is 0.5 inch greater than for the last half.

The record (continuous) at Leavenworth, Kans., covers fifty years; the mean for the first half is 4.7 lower than for the last half.

The foregoing summary covers long and not too badly broken records at all stations in the arid or sub-humid regions, as far as the Chief Signal Officer has been able to collate. It is to be noted that in twelve cases the rain-fall has increased in the last half of the series, as against a decrease at six stations. The same proportion (four increases and two decreases) obtained at the six stations with continuous records.

In March, 1887, the importance of the question of secular variation of rain-fall and consequent droughts impressed itself upon the Chief Signal Officer of the Army, and he directed a careful investigation into this question. The work of collation and discussion was intrusted, with very brief instructions, to Junior Prof. Henry A. Hazen, of the Signal Service, who, having previously examined this question, was thought to be best informed upon it. The outcome of his investigations, in brief form, appeared in the Monthly Weather Review of the Signal Service, April, 1887, the important deductions of which are as follows:

From month to month for more than a year reports have come in of a great lack of rain and consequent drought in Kansas and Texas. In some instances fears have been expressed lest there has been entered upon a period of more or less permanent diminution in rain-fall for this region. A careful investigation of this question was ordered by the Chief Signal Officer of the Army, and has resulted as follows:

The subject has already received attention at the hands of Prof. C. A. Schott, who decided in 1876 that up to that time there had been a slow and steady increase of precipitation since the earliest authentic records, which go back to about 1837. He also thought that probably the maximum or turning point had been reached and that there would be some diminution from that time on.

In 1883 an investigation of this question by the present writer showed a diminution of precipitation in 1879, but a marked increase for the three succeeding years. In the fifth biennial report of the Kansas State Board of Agriculture, p. 176, there is a paper entitled "Studies of rain-fall in Kansas, as affecting climate," in which the writer, after a discussion of observations at Fort Leavenworth since 1837, and at Lawrence and Manhattan for shorter periods, says: "Extremes follow each other in regular sequence. We have had no more than two or three dry or wet years in succession. * * * We may fairly claim that Kansas climate is becoming more and more favorable. We may expect in the future, as in the past, wet seasons and dry seasons. We find often that these alternate year by year, and if the change is not annual, we have two, three, or four years of excessive rains followed by an equal period when the rain-fall is below the average." A writer in the Coast Review thinks that a more or less severe drought occurs every seven years in the Missouri Valley. He notes a severe drought in 1860, a mild one in 1867, a severe one in 1874, and one less severe in 1881. A comparison of the precipitation for these years with the average for all the years shows that it was less. We may conclude that, in general, a marked deficiency in precipitation in any year has a tendency to drought, though this is varied largely by the distribution of rain and the temperature. A less fall in winter does not affect the crops if an average amount falls during the growing season.

On a comparison of the rain-fall during the growing season of 1886, for Kansas and Texas, we find a marked deficiency. The rain-fall for this year shows the following deficiencies: Omaha, —13 inches; Leavenworth, —12 inches; Dodge City, —2 inches; Fort Sill, —12 inches; Fort Davis, —6 inches; Galveston, —9 inches. It will be understood that the deficiency of 2 inches at Dodge City means more than the same would at Leavenworth, as the total precipitation is only about half at the former, as compared with the latter. Instances of as small a precipitation at Leavenworth back to 1837, are as follows: 1864, —19 inches; 1860, —15 inches; 1847, —14 inches; 1843, —19 inches. Taking the mean of each five years we find the following values and deficit or excess:

Pentade.	Mean.	Deficit or excess.	Pentade.	Mean.	Deficit or excess.
	Inches.	*Inches.*		*Inches.*	*Inches.*
1837–'41	31.42	—3.10	1867–'71	38.83	+4.31
1842–'46	29.32	—5.20	1872–'76	38.66	+4.14
1847–'51	33.35	—1.17	1877–'81	41.11	+6.59
1852–'56	31.28	—3.24	1882–'86	35.58	+1.06
1857–'61	35.37	+0.85			
1862–'66	30.34	—4.18	Mean	34.52	.....

* It should be noted that the period of observation is not sufficient to enable a perfectly satisfactory deduction, but it is plain that there has been a marked increase in precipitation during the last twenty years. The apparent falling off in the last five years is not unexpected, and does not indicate a permanent diminution, as it is mostly due to the small amount in 1886, and there have been four annual records previously, with a greater falling off than in 1886. We may conclude that the scarcity of rain-fall in 1886 is not unprecedented, and that from past observations there is no proof of a permanent diminution in precipitation. Many more years' observations will be needed to establish a marked secular variation.

We may consider that opening up the land to tillage, planting trees, and general covering of many square miles with vegetation that were formerly barren wastes has a tendency to retain the moisture from the clouds and this in turn renders the air slightly more humid, so that there has been an actual increase in the rain-fall, and so long as these favoring influences continue there is no danger of a relapse to former conditions. A diminution for one or two years will be followed by an increase, and the average precipitation will continue to increase.

A proof of the general increase of moisture in the soil is given in the biennial report quoted above, in the fact that, notwithstanding the increase of springs emptying into the water courses, there seems to be a tendency to a less flow of water in the streams. This seems to show a retention of moisture in the soil and a consequent increase of springs.

While this investigation applies more particularly to the eastern part of Kansas, because we have no long series of records either in western Kansas or Texas, yet from a comparison of rain-fall records during the past fifteen years, we find that the fluctuations in these regions do not materially differ from those in the region here considered. The same principles here enunciated apply to Texas, except as modified by a less cultivation of the soil and a less covering of the surface by vegetation. Farmers in these regions need fear no permanent change in the climate for the present at least.

The Chief Signal Officer does not hesitate to express the opinion that the trans-Mississippi and trans-Missouri rain-fall is slightly increasing as a whole, though in certain localities it may be slightly decreasing from causes set forth above, and it seems most proper for him to put forth his strong conviction, even if it be not a certainty, when, as in this case, it will tend to reassure the agricultural population in the lately drought-stricken districts of the West. There appears no possible reason to believe that the scanty rain-fall of the past year or two will not be followed by increasing precipitation in the next few years, which will maintain the annual rain-fall of these sections at the average, or even increase it. It is believed that the interests of the entire country will be subserved by the publication of a large edition of the rain-fall charts and tables accompanying this report.

The Chief Signal Officer desires to invite the attention of the Senate to the fact that there are a large number of counties in the twelve States and Territories above mentioned in which no rain-fall observations have ever been made. The value of such observations is obvious, and it is recommended that a joint resolution, as appended hereto, be adopted, which will authorize the Chief Signal Officer to issue, gratuitously, rain-gauges and measuring-sticks to any reliable voluntary observer who resides in a county from which rain-fall reports are not now obtainable, and who will guarantee to make at least one year's continuous record free of expense to the United States. The cost of 300 rain-gauges, which would probably cover these cases, would not exceed $900, while the data thus obtained would be of very considerable value. Under the present law the Chief Signal Officer can issue a rain-gauge to any observer situated at a point where observations are needed, provided that a bond is given, and the observer makes regular returns of the property to the Chief Signal Officer. This puts the observer to an expense of 50 cents for the bond, and the Government to the expense of stationery and forms of different kinds, as well as for clerical labor to keep account of the property. Eventually the rain-gauge rusts out, and is dropped by a board of survey; so that the issue of these rain-gauges gratuitously would really be more economical to the Government in the end than if a bond was given and returns made. The Chief Signal Officer believes that the value of these observations would exceed ten-fold the few hundred dollars of expense entailed by such a resolution. The contribution of time, care, and trouble given freely by such observations may be considered a fair offset against the outlay of 1 cent a day for one year by the United States.

A. W. GREELY,
Chief Signal Officer.

The PRESIDENT OF THE SENATE.
(Through the Secretary of War.)

CHARTS AND TABLES

OF

RAIN-FALL ON THE PACIFIC SLOPE,

WITH A DISCUSSION OF

THE CAUSES OF THE WET AND DRY SEASONS, THE ABUNDANCE AND DEFICIENCY IN DIFFERENT PORTIONS, THE SUMMER RAINY SEASON IN ARIZONA, ETC.

BY

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RAIN-FALL ON THE PACIFIC SLOPE.

INTRODUCTION.

During the year 1886 the writer compiled statistics of rain-fall for Washington Territory, Oregon, and California, which were published in the California State Board of Health report for that year. These tables have been extended to include more reports, with later data, and to embrace Nevada, Idaho, Utah, and Arizona, including most of the area west of the continental divide.

To present the data so as to be easily comprehended, the monthly and yearly averages have been placed upon charts, and lines drawn, showing areas of equal precipitation. A short memoir is also included, which considers the conditions and causes producing rain-fall in the region charted.

A knowledge of country is not only a matter of scientific interest, but of practical bearing upon the future development of territory to the rapidly increasing population, which must soon utilize all the capabilities of production anywhere in this country afforded. Much of the area has been heretofore considered only as a great mining country, with a few places adapted to grazing, and little attention has been given to other valuable features. The exceptional fertility of the soil when under the influence of water, with the genial climate, has stimulated already great irrigation and artesian enterprises. It appears a discussion of the primary source of water supply is a matter of both interest and value.

The most of these records are up to a recent period, and, with the number of months of observation included in making the average, any later observations may be added to the product of this number and the average, and thus a new average, including later data, again determined. Whenever a doubtful or incomplete record for a month occurs it is not included, which explains in many cases the considerable differences in the number of months used in determination of averages from the same place.

The source of the records are principally the Signal Service, Army post surgeons, the Southern Pacific Railroad reports, and a great number of excellent observers on the Pacific coast, whose attention to correct observations arises from a true appreciation of the close relation rain-fall bears to crop production. It is hoped that this publication may further encourage this large class of observers to continue and others to join, and thus, by increased numbers and continuity, further add to this department of meteorology. Especially is this desirable in localities where reports are absent.

GENERAL TOPOGRAPHY OF THE REGION WEST OF THE ROCKY MOUNTAINS.

A detailed description of the topography of the Pacific slope may be omitted, and such made having in mind only the prominent features which influence rain-fall. There may be observed a close coincidence in the lines of contour and of rain-fall where projected on the same map, especially in California west of the Sierras. In fact, the climate of portions of the Pacific coast is so directly dependent upon features of topography that an outline, at least, must precede any intelligent discussion.

The mountain backbones seem to constitute the dividing line of most elements of climatology. The Rocky Mountains form the main axis of the continent, and are the line of division between the Pacific coast and eastern climate, as well as the divide of two great drainage areas.

The Sierra Nevada range in California, and its continuation in the Cascade range in Oregon and Washington Territory, forms a secondary axis, further dividing the Pacific coast proper from the Great Basin and arid district, extending from Arizona to Idaho. A coast range in California again walls in the great valley of California, thus making a climatic belt within, differing from any other portion of the area under discussion. This valley of so great fertility and so densely populated has furnished the great portion of the records of rain-fall presented.

As before noted, the relation between elevation and rain-fall, with such frequent points of observation, is shown to be so close that each marks the valleys, lower foot-hills, broken lands, Coast and Sierra ranges.

To begin with California, the mean height of its surface will approximate 2,800 feet above sea-level. The high ridge of the Sierra Nevadas begins southeast of Tulare Lake, in latitude 36° north, and for about two degrees northward becomes a wide range, nearly averaging, at the summit, 12,000 feet above sea-level. The eastern slope is precipitous, falling midway to sea level into the Mono and Owens Valleys. The western side more gradually slopes into the Tulare Basin and San Joaquin Valley. This same chain from a little south of Lake Tahoe forms a narrower ridge, with its summit about 7,000 feet, which continues to where the Pitt River breaks through to join the Sacramento. The western side slopes gradually, giving a wide expanse of lower foot-hills and less of low valley country than in the San Joaquin. In the northern end of the State a considerable area averages from 7,000 to 10,000 feet above sea-level around Mount Shasta, which is 14,000 feet. From the northern coast portion of the State the Coast Range forms a series of ridges, the highest of which seldom are above 4,000 feet. This chain is broken at the Golden Gate, but commences again and runs to the southern State boundary line, averaging at its crest about 3,000 feet, and connecting with the Sierra Nevadas in the Tejon range, thus closing the great central valley of California on the south. This valley is midway at sea-level, about the Suisun Bay, and rises very gradually toward either end. South and east of the Tejon and southern Coast Range, to the Colorado River, is a desert plain, from 2,000 to 3,000 feet elevation, broken up by short chains of jagged, bare peaks. The extreme southern portion, bordering on the line of the Southern Pacific Railway, is even below sea-level, and doubtless the ancient bed of the receded Gulf of California.

There are several valleys along the coast, the principal being the water-shed of the San Gabriel and Santa Anna Rivers, which reach back nearly a hundred miles to the San Bernardino group of mountains. Next is the Santa Clara River Valley, the Santa Barbara coast, Santa Maria and Salinas River Valleys, and valley about the San Francisco Bay. All these, opening into the Coast Range, are wide and embrace large areas less than 1,000 feet in any portion above the sea, and include, perhaps, the most equable climate of any spots on the globe.

Through Oregon and Washington Territory runs the Cascade Range, the crest being from 8,600 to 1,000 feet high, paralleling the north and south coast line about 100 miles distant. Numerous peaks of the Cascades rise above the line of perpetual snow. The Columbia River finds a passage through the range and is joined by the Willamette River, which drains a valley smaller but similar to the Sacramento River Valley and shut in from the coast by a ridge about 3,000 feet above the sea. The valleys reaching in from the coast are small, and, except the Umpqua and Rogue River Valleys, the shore line is quite precipitous to Cape Flattery. The Puget Sound Basin also covers considerable area, but is separated from the west coast by the Olympia Mountains, another coast range averaging about 2,500 feet high, but rising to 8,000 feet above sea-level in Mounts Olympus and Constance, near the Juan de Fuca Straits.

In Oregon, east of the Cascade Mountains and embracing the southern half of the State, the range rapidly merges into a plateau about 4,000 feet high. The southern half, east of the Cascade Mountains, is cut up by the Blue Mountains, except along the Columbia River, where considerable valley country exists.

In Washington Territory, east of the Cascades, occur the great plains of the Columbia River, a large portion of which is less than 1,000 feet above the sea. The eastern portion of the plain, however, gradually ascends to the foot of the Bitter Root Mountains. The Bitter Root range com-

mences in northern Washington Territory and forms the eastern Idaho boundary in a ridge averaging some 7,000 feet high.

The Territory of Idaho has a surface whose mean height above the sea is 4,700 feet, a greater portion being from 2,000 to 6,000 feet. A spur of the Bitter Root Mountains extends from northeast down to the vicinity of Boisé City and appears as a high, precipitous, saw-tooth range.

On the boundary of Wyoming the high Wasatch Mountain range extends east of Great Salt Lake nearly to southern Utah. Nevada and western Utah, with southern Idaho and southeastern Oregon, constitute the Great Basin, which has a general altitude somewhat less than 6,000 feet. It consists of many narrow and short ranges, separated by wide barren plains. The mountains are generally low, with only an occasional peak that attains any considerable height. They are mostly sharp in outline, jagged, black and bare, extending north and south.

Arizona has an average altitude of about 4,300 feet, but with a variety of topographical features as numerous as California. It is principally an elevated plateau, from 5,600 to 7,000 feet in the north, and gradually descends to sea level in the southwest. The plateau portion is crossed by deep cañons and narrow valleys, diversified by massive mountain groups, surrounded by elevated grassy and wooded plains. The apex of the plateau is the San Francisco Mountains, which rise to nearly 13,000 feet above sea-level. From these mountains a ridge extends southeast, known as the Magollon range. Spurs continue to the southward in the eastern part of the Territory, which join the Sierra Madre in Sonora. The greater portion of Arizona is a high table land, and the low valleys are much smaller in area than generally supposed. The following table, from "Tannett's List of Elevations," shows the area of land in Arizona below 1,000 feet to be less than 3 per cent. of the whole Territory:

Areas and average heights of States and Territories west of Rocky Mountains.

State or Territory.	Approximate area in square miles.	Mean height above sea-level.	Areas in square miles between—												Area above 13,000 feet.
			Sea-level and 1,000 feet.	1,000 and 2,000 feet.	2,000 and 3,000 feet.	3,000 and 4,000 feet.	4,000 and 5,000 feet.	5,000 and 6,000 feet.	6,000 and 7,000 feet.	7,000 and 8,000 feet.	8,000 and 9,000 feet.	9,000 and 10,000 feet.	10,000 and 11,000 feet.	11,000 and 12,000 feet.	12,000 and 13,000 feet.	
		Feet.														
California	159,400	2,800	40,000	27,000	32,000	18,000	13,500	9,500	6,000	3,900	2,500	1,600	900	700	500	300
Oregon	95,000	3,800	11,000	11,300	10,800	11,000	30,000	11,300	4,300	2,800	1,500	800	200	200	100	
Washington	70,000	2,600	16,000	18,000	15,400	6,900	4,400	3,200	2,600	1,100	800	700	500	300	100	.....
Idaho	86,300	4,700	.....	1,100	13,200	16,000	22,200	19,200	9,400	4,100	1,600	400	100	.....	.....	.....
Nevada	112,000	5,600	.....	500	4,700	9,300	21,000	35,000	25,000	13,000	2,800	600	100	.....	.....	.....
Utah	84,500	6,100	.....	.....	.....	.....	21,000	25,000	19,500	9,500	4,800	2,500	1,400	600	200	.....
Arizona	109,300	4,300	3,000	10,800	18,900	20,400	14,500	14,000	21,000	4,800	1,600	200	100	.....	.....	.....
Total	716,500	.....	70,000	68,700	95,000	81,600	126,600	117,200	87,800	39,200	15,600	6,800	3,300	1,800	900	300

RAIN-FALL WEST OF THE ROCKY MOUNTAINS.

It is perhaps well to remark that the records of rain-fall, even when taken by a miscellaneous class of observers and with a variety of styles of gauges, gives results that are comparable and seem to approach about the true measure of precipitation. There are, however, in some cases evidences of inaccuracy. The advantage of rain-fall averages over other climatic data—temperature, for instance—is very great, for the questions of exposure, hours of observation, etc., do not enter so largely.

The territory included in the discussion, charts, and tables, except the immediate Pacific shoreline, is drained by few important rivers. The Columbia, with the Snake tributary, the Sacramento, and San Joaquin, and the Colorado, having the Gila, Green, and Grand tributary to it, are all. Some have found their way over plateaus and through mountain chains by erosion, which shows the long period of time the water falling upon the interior mountains has taken the same channel in its return to the ocean.

This vast area includes such a variety of physical conditions that the quantity of precipitation invited by different causes upon the surface ranges from the extreme to the least occurring

in the United States. The topographical features, with temperature, close proximity to or distance from districts of cyclonic frequency, in the main, cause these differences. The presence of a high range of mountains so near the ocean confines the greatest rain-fall to the proximate coast, and the conditions of temperature being so constant, and the distance from regions of any storm frequency being so great in the southern portion of the Pacific shore-line, the rain diminishes in every direction as we recede from Cape Flattery, the extreme northwest point of the United States.

The season of rain occurrence notably varies in different portions of the Pacific slope. In California, Oregon, and Washington there is a marked dry season during the summer, which lengthens in duration to the southward. In Arizona there are two rainy seasons, one in mid-summer, the other during the colder portions of the year. Between the Rocky and Sierra Nevada ranges of mountains the rain-fall is rather uniform, but with an increasing tendency during the winter.

The primary source of precipitation is undoubtedly the ocean. By a consideration of the means by which the vapors from this source are distributed and the changes that occur in their transport from this great reservoir, we may gather some knowledge of their divergence and manifestation in so different quantities at different times in the various locations within the area under consideration.

The ocean winds that blow over the Pacific slope must be heavily laden with moisture. Perhaps there is little difference anywhere on the Pacific coast-line between the actual amount of vapor that is brought from this aqueous reservoir. The direction in which it is carried is with the prevailing wind and cloud movement, from the west and southwest. The warm Japan current appears to make the moisture brought over the northern shore as great as further south, and which probably contributes in a marked degree to the heavy precipitation, especially from Oregon to Alaska. On the shore-line we find frequent and at some seasons constant fogs, arising from the contrast of temperature between the water and land. Going farther toward the interior, but at no great distance from the shore, the first mountain step is found in the Coast Range. Vapors are often raised to the condensing cold of elevation by this range, but they by no means take any considerable portion of it, but the second and greater step, a comparatively short distance from the first, appears in the Sierra Nevada or Snowy Mountains, whose cold summits deplete the moisture brought from the ocean perhaps one-half. Beyond this mountain axis no important elevation occurs till the Rocky Mountain system is encountered, which perhaps still further depletes the air of its moisture by the lower temperature of its higher summits. But they do not appear to exhaust the supply, for there is no evidence of an equal rain-fall on the Western Rocky Mountain slope as on the Western Sierra slope; consequently much of the Pacific moisture may be carried beyond, or east of the Rocky range, and combines, especially with the Lake sources, to give abundance of rain to the Lake Region and west of it. It will be borne in mind that the Montana and Dakota plains in the winter are the coldest regions on the continent, and serve to furnish the temperature conditions similar to a mountain range. In fact, if the isothermal lines could be looked upon as contour lines, those of the winter would place an isothermal mountain summit in Dakota with a mean temperature of zero degrees, while the base of these contours would be the isotherm of 50° swinging in almost a circle near the Pacific shore, the northern Mexican and Texas boundary lines. It is but little wonder that the Dakota and Montana plains, if fed by Pacific Ocean moisture, and being, as they are, a meteorological temperature summit, become the originating places of blizzards and storms that attend disturbances in that region.

RAIN-FALL IN CALIFORNIA.

That part of the Pacific slope west of the Sierra Nevada and Cascade ranges is the most highly favored with rain, and will claim our attention first. By consulting the charts the most noteworthy peculiarity is the summer droughts. Summer showers and thunder-storms occur, however, in the mountain regions of northern California, also in Oregon and Washington west of the Cascades. There is a general increase in frequency of summer rains from south to north, and the drought shortens in duration in the latter direction.

Frequently not a sprinkle of rain falls in the Sacramento or San Joaquin Valleys, nor in the southern counties, from May to October. This periodic division of rainy and dry weather

during the year has brought into use the term wet and dry season, and reference to rain-fall measurements are generally understood to commence with the rainy season, and the term seasonal, instead of annual, is invariably the current estimate. In the great valley of California the expectation of rainless summers admits of the uninterrupted cereal harvest, its sacking and shipment to be made without fear of damaging rains. It is an ordinary sight, during the harvest season and after, to see millions of bushels of grain sacked and piled without shelter in fields or on open cars.

The line of greatest rain-fall difference occurs on the foot-hill region of the Sierra Nevada, skirting the Sacramento Valley; thence to the vicinity of Mount Shasta, and westward to where the coast curves southeastward near Cape Mendocino. This latter vicinity is designated a weather divide, and separates the wetter climate of Oregon from California. On the land it is marked by change in the character of vegetation dependent upon rain-fall, and at sea by a change from the calm pacific water to that disturbed more frequently.

The reason for this striking change in climatic conditions at this point is not so easily explained, and without distinct changes in the topographical conformation, to which most peculiarities of this nature may be attributed, appears puzzling. The forests would appear the result rather than the cause.

From careful observations of the climatology; and study of the tri-daily telegraphic reports while on duty on the Pacific coast, the conclusion forces itself upon my mind that it is in the main to be attributed to the cyclonic disturbances which occur on the coast north of Cape Mendocino. The cause of these peculiar manifestations within the atmosphere on the northern coast, rather than farther south, it is not my purpose here to discuss. It is perhaps sufficient to state that the cyclonic areas or barometric depressions which appear over the North Pacific during the months from November to April are extremely frequent and severe, while south of Cape Mendocino they are rare, and the effects felt there are those which are incident to the margin of these cyclonic areas rather than the front and eye of the storm.

To make plain to other than the professional student of meteorology, it may be remarked that it is universally accepted that all violent storms are great whirlwinds, called cyclonic areas, in which the wind blows in circuits around an axis. This axis is the eye or center of the storm and the circuit of motion is spirally inward and upward about the axis, contrary, in these latitudes, to the motion of the hands of a watch, and the nearer the center, generally speaking, the greater is the wind velocity and rain-fall. These areas here originate or move with the Japan current upon the Oregon and Washington coast, and there finding an abrupt mountain barrier, paralleling and very near the coast, its eastward movement is retarded and the area becomes flattened into an oval-shaped form by this physical obstacle. Being unable to pass this barrier, it wavers up and down or expends its force. But this requires time and the storm continues with the general disturbance, becoming stationary in this region, tarrying quite a period.

Now, considering the resulting wind direction on the south edge of the cyclonic area, thus hovering north of Cape Mendocino, it is found to be from the southwest. At sea this direction is maintained undisturbed. South of Cape Mendocino, where the coast line trends southeast, the southwest wind turned nearly southerly, sweeping up and against the coast, manifestly having the ocean temperature over which it has passed. Again, the wind over California is controlled by the great walled valley extending from northwest to southeast, and the wind over it becomes southeasterly and partakes of the temperature of the country over which it passes. This triple system of wind currents converging over northwestern California, bearing different temperatures and thrown upward over the elevations in that neighborhood, it is believed will explain the abundant downpour and other observed phenomena.

There is, however, a narrow strip of country contiguous to the coast, and on the western edge of the mountain ridge extending to the Santa Cruz Mountains, that is marked by the growth of redwood timber, which requires abundant moisture. Very few observations, however, tell us how much rain actually falls within this belt. It is altogether probable that the fogs contribute largely to the existence of this redwood strip.

A feature which attracts attention is the marked deficiency of rain-fall on the immediate seacoast, as instanced by the record at Farallon Island, Point Reyes, Cape Mendocino, and others. The deficiency at these places on points well out from the elevated land, if the rain-gauges are not in-

fluenced by exposure to strong winds, perhaps shows the necessity of a strong upward movement of wind, influenced by the incline of mountains or elevated bodies of land, to produce precipitation of any account. This being true, the line of equal rain-fall should return, skirting the coast, and thus show the diminution to seaward instead of the reverse, according to most published charts.

The fogs of the Pacific coast, though not generally included in considerations of rain-fall measurements, are so striking and produce effects so nearly related to rain-fall that they deserve remark. The temperature of the Japan current coming down from the North Pacific is almost uniform throughout the year. As the land becomes heated above or cooled below this sea temperature, the contrast resulting in close proximity creates these fogs. In the summer so wide is the difference that the comparatively cool ocean is lined with a wall of thick fog vapor, that rises 1,000 feet or over, rolling in upon the mountains, and, where a gap occurs, forms a river of fog, submerging everything in its path; broadening and branching, it follows up the valleys until dissolved by the dry air of the interior. These fogs add considerable moisture, and not infrequently five hundredths of an inch of water will be precipitated in a single night. This fog-fall is not considered as rain in the reports of the Signal Service. The effect of the moisture absorbed from these fogs doubtless adds materially to maintaining the growth of trees and plants in the district of their occurrence.

The climate of the country adjacent to the coast over which these fogs roll, and opposite the gaps in the Coast Range, or lower surmountable portions through or over which they move, is modified by the cooler ocean temperature and the sea winds of the summer carry much moisture. These effects are felt in the belts often a hundred miles from the ocean. Especially noteworthy are these effects felt opposite the Golden Gate, which is in sufficient strength to produce the growth of redwoods on the Contra Costa Hills, above Oakland, and create the so-called thermal belts and radically change the climate of localities where their influence is drifted by the prevailing winds.

Fogs of this character occurring in the southern part of the State and in the vicinity of Los Angeles are drifted in to a thousand feet elevation, occasionally reaching San Fernando and Colton. The strength of the dissolving hot air over the land surface determines the distance inland reached by these fogs. At night they reach farthest; the heat of the morning sun dissolves them, and in the afternoon they again roll inward as the heat diminishes by the retreating sun and rapid radiation.

California rains during the rainy season are not constant, but occur at intervals, the weather between the rains being beautiful and nearly cloudless. It consequently may be inferred that precipitation is not altogether the result of topographical features, but some other influence must operate. The cyclonic areas that hover over the northern coast have already been referred to, and it is found that most rains are simultaneous with their existence. These cyclonic disturbances, flattened by their impact against the mountain ranges, frequently reach far to the south, and perhaps often form subsidiary disturbances that, held off the California coast, are themselves unable to pass the mountain obstacles here presented. The winds brought thereby into motion favor the centralization of vapor-bearing clouds, or the transfer of volumes of moist air within the influence of altitude, cooler surfaces, and snowy mountains. In such a consideration the reason may be seen for the less precipitation in the great valley than on the surrounding foot-hills, and the still greater fall upon higher ascent. The diminishing rain-fall in the southern portion of the valley is explained as well from the fact that the south wind has already passed over a considerable range of mountains, and that the influences of the cyclonic disturbances are felt less and less the farther away from the center. In fact, it requires a most decided cyclonic development central off the mouth of the Columbia River to extend its marginal influence to southern California.

Supposing the cyclonic area west of the north Pacific coast a type of weather conditions resting some days in that vicinity, instead of moving and applying the ascertained rate of rain diminution from a study of many storms that occur in other parts of the world, this general decrease on the southeast side of cyclonic areas will not differ greatly from the general decrease on the Pacific coast from the Columbia River to the San Diego Bay.

It is necessary, therefore, that the rain-fall should diminish from north to south, and that the general proposition that a change in the prevailing winds, as ordinarily understood, effects the

change from the dry to the wet season, or the reverse, must be doubted. The rains occur when the cyclonic disturbances appear with the increasing cold of the season. They increase from feeble to heavy rains as the disturbances become more decided. It is these disturbances that cause the wind to change to rain, bearing southerly, and when the opposite conditions, or anti-cyclonic, replaces the cyclonic the winds change to the northwest and the clouds pass away.

The strong, steady southerly winds that almost invariably attend rains from Puget Sound to Ballona Bay are peculiarly a fact of general observation. No sooner does the south wind set in than the rains begin to be continued steadily till the wind shifts. In the northernmost sections it begins always earlier than the next southward.

Another notable observation is the frequently sudden clearing away of the clouds. The aspiration induced, resulting in the periodic rains of this long belt of coast, must be attributed to cyclonic areas in the north; as well can the cessation of these winds and attendant rains be accounted for when the cyclonic areas escape, as it were, with a bound over the mountain range.

It is a noteworthy fact that the prevailing wind over California is westerly, and on the coast there results almost continuous monsoons, right from the sea, and it might naturally be asked if we are to attribute the rain to the wind, why these do not create some rain-fall, at least in the summer, when they are specially strong; much more might rain be expected during their winter occurrence. In the summer the explanation is derived from a consideration of the warmer land temperature, which absorbs or dissolves the moisture passing over it, and the further the interior is penetrated the greater the dissolving power. In the winter, however, the condition is changed into a cooler insular one and the winds passing into it should condense the moisture instead of dissolving it. But it is found that without a south wind precipitation is rare.

The prevailing direction of the surface wind in California, as ascertained from consulting records and noting the leaning of trees, is nearly as various as the localities of observation. Local winds assert themselves throughout the coast. In a general way they may be designated westerly on the coast; in the great valley, southerly in southern portion and northerly in northern portion. These variations exist at all times of the year, and it appears that to explain the rainy season by the changing of the prevailing wind direction is not so satisfactory as the principle of disarrangement of atmospheric equilibrium in the occurrence of cyclonic areas which change the wind to the southerly. Resulting from strong southerly winds, moist atmosphere is transferred to the cooler north or given an upward deflection; expanding, rises into the cold of elevation. With these causes in view, the difference in rain-fall still remains dependent on topography, altitude, proximity to the ocean, situation with reference to mountain chains, and latitude.

It may, however, be adhered to that the prevailing atmospheric movement is from the westerly, as shown from points sufficiently elevated to eliminate the local effect, and the cloud movement is observed to be quite regular from the west.

In the southern part of the State the Colorado and Mojave deserts result from the usual ascribed causes, added to the fact of their being entirely shut out by mountain chains from the influence of any atmospheric disarrangement. The coast portion of southern California, separated by a mountain chain rising quite high, divides the fertile from the desert country by a remarkably sharp line. The increase of rain-fall from the sea-coast to the culminating ridge, which attains in Mount San Bernardino 12,000 feet, is due to increased elevation, as is the case over the ranges trending from here to the northwest. In this whole southern district the rainy period is short and the rain-fall small.

The table showing the greatest and the least rain observed at a number of stations in California shows the variation in different months and years.

RAIN-FALL IN OREGON AND WASHINGTON.

The system of mountains and valleys in Oregon and Washington Territory being similar to the district just discussed, the rain-fall differs but little except in amount. There is west of the Cascades distinctly a wet and dry season, as well as in California. The wet season is characterized by either down-pours or drizzly weather and the dry season by scattered showers. The periodic feature of rains continues near Vancouver's Island, and northward in a lesser degree, for at Sitka the rain is nearly equally distributed throughout the year.

In discussing California, reference was made to the cyclonic areas that at intervals appear off the coast of Oregon and Washington. If the margin of these storm areas causes rain far to the south, it naturally follows that much more will it characterize the region nearer the center of disturbance. Upon investigating the relation of rain areas to storm centers it has been determined that the centers of the rain areas are in advance, and, like the isobars representing the storm depression, are elliptical with the longer axis, taking the same direction as that of the longer axis of the cyclonic disturbances. From observation of meteorological reports of the Pacific coast the tendency to the advance of these areas of low barometer, and hovering, as they do, in North Pacific for quite a period, disclose a feature not generally considered and one believed to account largely, at least, for the climate and great rain-fall of this region. Whether these cyclonic areas over the Japan current resemble in their origin and movement those that follow the Gulf Stream across the Atlantic can not now be satisfactorily discussed, but only the similarity in effects upon the western coasts of America and Europe remarked.

The general favorable conditions, as before noted, in parts of California concerning the influence of cyclonic areas in bringing the rain-bearing ocean winds from warmer to cooler latitudes and the mountain range near the coast to deflect the wind currents upward, also operate in Oregon and Washington, except in greater strength. There are, however, occasional showers occurring during the summer season, that must be accounted for by the existence of prevailing ocean winds and currents, close mountain summits wrapped in snow, electrical and other causes, aside from the aspiration of cyclonic areas, which are quite absent in summer.

By consulting the data from the stations near Puget Sound and Straits of Fuca there is seen to be a wonderful contrast between the scantiness of rain at Port Townsend and Port Angeles with its abundance at Neah Bay and Tatoosh Island. Location largely accounts for the extreme rain-fall of the two last-named places; however, there is a winter increase in the percentage of deviation of rain at these places between July and January that would appear to permit its being attributed to other than entirely local influences. When the local influence is considerably overridden by cyclonic effects we could expect the rain differences in the two localities at different seasons to become less, which accords with the facts disclosed by the data.

This instance of such an enormous rain-fall at Neah Bay and the difference between it and other points near by call for special reference. The records can not be doubted, because taken by careful scientists of the U. S. Coast Survey or by the U. S. Signal Service. The record at Neah Bay is the greatest of any point in the United States, averaging 111 inches and known to have reached 132 inches in twelve months, and in one day 6.90 inches. This extraordinary precipitation about Cape Flattery is due mainly to the current of wind up the coast meeting the wind down the straits, with the two ocean streams that impinge upon the outlying peninsula. One, the Japan current, comes from the northwest; the other sweeps along the immediate coast line of Oregon and Washington towards the north. The heavy rains in this vicinity invariably accompany a south wind. A portion of this wind follows the northerly ocean current; another part passes over the land, taking the channel of least resistance, which is the depressed country lying between northwestern Oregon and Puget Sound, the whole becoming like a great river of warm air with two branches, the lesser being over the land surface. This current, moving down over the Puget Sound Basin, but passing over a rougher surface than that along the shore-line, is retarded, and after debouching as a southeast wind upon the waters of the lower sound and flat country near Port Townsend, it is drawn down the Straits of Fuca as a southwest wind. Overtaking the main coast wind, these air streams, now with somewhat different temperatures, are blended together over the vicinity of Cape Flattery, and great condensation takes place.

The degree of shelter a place has may account for the difference in Tatoosh Island and Neah Bay records. The rapid wind current passing over the gauges may in part account for the reduced records at Tatoosh Island and near Port Townsend. At Crescent City, Cal., for instance, two gauges, one somewhat sheltered and the other well exposed, give records widely different, though they are very near each other.

The Olympia Mountains undoubtedly contribute some effect, as also the tide which transfers alternately cold and warm water to the vicinity, equalizing the temperature of the inland waters of Puget Sound.

It may not be amiss to note the character of the mountain summits of some prominent peaks in Oregon and Washington as influencing the summer rains. Mounts Hood, Saint Helen, Baker, Ranier, and others are notably above the limit of perpetual snow. During the summer their influence for this reason forms a striking contrast to the mountains in Arizona, which will be observed later.

East of the Cascade Mountains the wet and dry seasons are also noticeable, especially in the Columbia Basin. Rain rarely falls before the middle of October. Grain may be observed after harvest, as in California, piled in the fields, and is considered perfectly safe.

RAIN-FALL IN IDAHO, UTAH, AND NEVADA.

The entire arid country east of the Sierra Nevada range, except the plateau country of Arizona, possesses features so similar that it can all be described together.

It has been supposed that the country inclosed by these two mountain ranges, except perhaps the extreme northern portion, possesses the characteristics of a country having equally distributed rains throughout the year, instead of a periodic occurrence. The averages in the tables disclose the error of this generally accepted idea. Not only is this shown for the northern portion of this arid area, but for the stations in the Mojave and Colorado deserts. It is true the summers are not altogether rainless, as showers visit the basin district and become more pronounced in the mountains.

Considering the sources of the water of the Colorado and Columbia Rivers, it is evident that they come from the mountains, and not from the plateau valleys through which they flow. The Great Basin of Utah and Nevada has insufficient water falling within it to require a channel to carry it to the ocean, but it is absorbed by the sands and saline lakes. The actual amount of precipitation that occurs on the mountains is even impossible to closely approximate, but it is plainly considerable.

The occurrence of increased rain-fall from south to north is attributed, in the main, to nearness to the field of cyclonic action. These cyclonic areas seldom, if ever, pass below Salt Lake, but north of which they are not so infrequent. Having either formed over the basin or areas whose progress the Cascade Mountains have failed to arrest, the mountain wall of the Sierra Nevada and Cascades should, if everywhere equally elevated, offer an equally potent influence to deplete the moisture from the ocean winds. The summit ridge, however, not being of equal elevation, more moisture enters this area from some points of its western boundary than others, but the effect of a moisture stream through such a gap as exists in southern California is not apparent in rain-fall, and the reason is that it does not pass over again any elevated mountains, or seldom, if ever, comes within the influence of cyclonic areas.

During the summer there is manifest in the mountains of New Mexico and Arizona from the heavy rains of this period the existence of much moisture, carried undoubtedly from the Pacific Ocean over some mountain depression. In a consideration of this kind the matter of vapor depth must not be overlooked. A mountain wall like the Sierra Nevada and Cascade ranges holds back, perhaps, one-half the moisture, because the vapor decreases upward, and at least one-half of the whole is found below 6,000 feet.

The area between the main Rocky and Sierra ranges is comparatively a dry one, adapted principally to grazing. In the level valleys of running streams irrigation will produce the most prodigal yield of crops. This entire area, however, is shown to be much more favored with rain than was supposed a few years ago, when it was very inappropriately called the Great American Desert. The pioneers into this country little imagined that its dry-looking mountains and plains would soon become the feeding place of millions of cattle, and the valleys could be transformed by water into places delightful to every sense. The peculiar grasses of this region do not appear to require more than an occasional light shower and the melting snow that has fallen during the winter season. This area is rough and elevated—a series of basins within an arid surface, with salt lakes and salt, sandy plains in every part that in the heat have the mirage sea appearance. None of the stations recording rain in this area are at greatly elevated points, as the railway

lines along which the records are taken always seek the valleys and low places. The season of greatest precipitation in this area is during the winter months, which occurs largely in the form of snow on the mountains.

RAIN-FALL IN ARIZONA.

In the plateaus of Arizona the rainy season comes in the summer months, the explanation of which will be undertaken. The first suggestion of this explanation came from observations of the San Francisco Mountains during a scouting trip in May, 1887. The report then made is reproduced here with some additions. The attempts at the explanation of the summer rainy season in Arizona have never been satisfactory. Observation and study of the San Francisco Mountain led to the explanation which will follow, and perhaps, when considered in connection with the general features of Arizona, may be made to explain the cause of the summer rains all over the Territory, in New Mexico and Sonora. The mountains in Arizona occur generally in groups and, if considered as lying above a certain plain, would appear like islands in an archipelago, so scattered are they over the high plateaus. Considering the San Francisco Mountains only, the rains are said to commence about the middle of July, some years, however, earlier and others later. Old residents about the mountain assert that there is a relation between the commencement of the summer rains and the amount of snow upon the mountains. When the snow is less than usual the rainy season begins earlier, and later when an unusual amount of snow has fallen. The Indians call the San Francisco or Agassiz Peak the "mount that sits on the clouds" and Do-gho slee, or weather-maker. In these traditions it is the source of weather changes and the residence of their weather god. They say when the mountain is bare this god becomes thirsty, but when surrounded by snow he drinks from the melting snow banks. The Supai Indian medicine-men understand the matter apparently, for they will promise that they will make the rain commence at a certain time, and it seldom fails to come as promised. By their rain dances and other forms of worship of their weather god they tell their people he has promised, owing to satisfaction with their worship, at a certain time the clouds will gather and rain come. It is further related that much of the ill-success of the Christian missionaries with the Supai Indians about this mountain is owing to their inability to influence and predict rain, and the Indians are thus credulous.

From any Arizona map the San Francisco Mountains appear as an isolated group, rising about a mile above the plateau of which it is the apex. At some seasons it can be seen within a radius of some 200 miles as a snow-covered peak, glistening, grand, and beautiful above the dry country around it.

It is known that the temperature decreases with elevation. On account of this temperature diminution with elevation, snow covers mountains when not a trace is seen at lower levels. On mountain sides the snow-line gradually ascends with the advancing heat of summer, and when the elevation of a mountain is so great that the summer mean of any portion does not rise for any length of time above freezing, it becomes perpetually covered with snow. The San Francisco Mountains do not rise high enough to become perpetually snow-covered. This being the case, they receive a new coat of snow each winter, which varies with the season every year and is sometimes great, in other winters small. It is now seen that in the summer months these mountains approach bareness sooner or later, according to the amount of snow which falls upon them during the previous winter. So long as the snow remains the decrease in temperature up the mountain side is equal, or nearly so, to the decrease with elevation. The radiation from a white cloak of snow does not favor the warming of the mountain, and it is possible that the heat received on a white mountain surface differs little from the heat absorbed by the atmosphere at equal elevations. While the snow remains the level strata of air at equal elevations over the plateau and on the mountain sides can be conceived to differ but slightly and so continues while the snow lasts. When the snow fallen during the previous winter is much less than usual the mountains become bare earlier. When barren of snow a change, sudden and marked, occurs.

The dark mountain surface absorbs that, and the insolation being even greater at the summit, the mountain becomes a heated pyramidal body, reaching high above the surrounding plateau surface. The strata of air of equal temperature that over plane countries may be supposed to be level become in such a case at once disturbed.

In profile over level countries those lines showing isotherms of elevations would be nearly horizontal, and a cross-section thus shown of the changes in temperature with elevation, but over an isolated mountain summit when the mountain is covered with snow, those lines will be level or perhaps dip downward to the mountain surface; but when bare, and during summer, the line will curve upward, the lower ones pro bably touching the flank of the mountain, at first low down, but higher and higher with the season. The sectional view of the temperature changes after the mountain has become well heated would show the lines of equal temperature curving upward and finally, perbaps, over the mountain. As the heated air ascends the mountain becomes, as it were, a convecting flue, affording an easy channel upward for great amounts of air to be suddenly lifted to a high elevation. When expanding, cooling, and condensing, the upper currents distribute the rain over the plateau, and especially on the side opposite the prevailing wind current.

The application of the foregoing principle may perhaps lead to accounting for the heavy summer rains all through Arizona, where detached ranges and mountain groups exist.

Throughout northern Mexico, in Arizona, and New Mexico the phenomena of profuse local summer rains are everywhere observed, which fill the natural high tanks, which accumulate and preserve the water. Though between the mountains narrow, desert-like valleys exist, this singular provision for rain distribution will at no distant day be utilized and these plentiful supplies of mountain rains made to flow over the rich lands and yield bounteously all semi-tropical products.

The river valleys of southwestern Arizona receive but little rain, indeed, but the water-courses through them, rising in the mountains, where abundance of rain falls two seasons of the year, bring sufficient to supply this want, and assures, to my mind, the future of this comparatively unknown section of our country.

WASHINGTON TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
1	Camp Semiahmoo.	Whatcom	48 59	122 45	11	1 4	Mar., 1859	June, 1860	U. S. post hospital.
2	Whatcom	do	48 45	122 29	.. ....	0 9	Dec., 1875	Aug., 1876	Mrs. A. E. Smith.
3	Fort Bellingham	do	48 48	122 30	88	2 2	June, 1857	July, 1859	U. S. post hospital.
4	Fort Colville	Stevens	48 57	117 55	2,800	16 2	Jan., 1861	Feb., 1880	U. S. post hospital. Record much broken. Mar., Apr., 1863; Aug., 1864, to Sept., 1866, inclusive; Dec., 1867; Feb. to Apr., 1868, inclusive; Dec., 1868; Feb., Sept., 1869; Aug., 1872; Feb., 1878.
5	San Juan Island	San Juan	48 28	123 01	150	9 4	Jan., 1864	Dec., 1874	U. S. post hospital. Record much broken. Feb. to Apr., 1865, inclusive; June to Nov., 1865, inclusive, May to Aug., 1866, inclusive; Nov., 1872; Sept., Oct., Dec., 1873; Jan., July, Oct., 1874.
		Skagit.† Island.†							
6	Tatoosh Island	Clallam	48 26	124 30	90	6 10	Apr., 1869	Nov., 1887	A. Sampson, Signal Service. Record much broken. June, July, 1869; Feb., 1872, to Sept., 1883, inclusive.
7	Neah Bay	do	48 22	124 37	40	6 9	May, 1863	Nov., 1887	James G. Swan, Thomas Stratton, Signal Service. Record much broken. Oct., 1864; Oct., 1866, to July, 1874, inclusive; Aug., Sept., 1874; Feb., 1875, to Oct., 1878, inclusive; Aug., 1881, to Nov., 1883, inclusive; Mar. to Aug., 1887, inclusive.
8	Pysht	do	48 15	124 03	.....	3 4	Dec., 1883	Nov., 1887	Signal Service. Apr. to July, 1887, inclusive, and Sept., 1887.
9	Port Angeles	do	48 07	123 30	.....	4 9	Apr., 1881	Nov., 1887	Thomas Stratton, Signal Service, Jan., 1882, to Nov., 1883, inclusive.
		Snohomish.†							
10	Port Townsend	Jefferson	48 07	122 45	16	5 6	Jan., 1859	Dec., 1886	Thomas Stratton. U. S. post hospital. Record much broken. July to Dec., 1859, inclusive; Mar. to Nov., 1860, inclusive; June, 1861, to Oct., 1867, inclusive; Mar., 1868; Aug., 1868, to July, 1873, inclusive; Apr., Sept., 1881.
		Douglas.† Lincoln.†							
11	Fort Spokane	Spokane	47 50	118 15	.....	3 11	Oct., 1883	Aug., 1887	Signal Service and U. S. post hospital.
12	Spokane Falls	do	47 40	117 25	.....	6 11	Feb., 1881	Dec., 1887	Signal Service.
13	Blakely	Kitsap	47 40	122 32	.....	9 11	Feb., 1878	Dec., 1887	R. M. Hoskinson.
14	Ellensburgh	Kittitass	47 00	120 30	.....	2 3	Feb., 1884	Apr., 1886	George W. Parrish.
15	Seattle	King	47 35	122 20	.....	1 0	July, 1877	June, 1878	R. M. Hoskinson.
16	Vashon	do	47 30	122 35	.....	0 6	July, 1887	Dec., 1887	F. A. Carpenter.
		Chehalis.† Mason.†							
17	Olympia	Thurston	47 05	122 50	.....	10 6	July, 1877	Dec., 1887	Signal Service.
18	New Tacoma	Pierce	47 15	122 30	... .	3 8	Jan., 1884	Dec., 1887	Northern Pacific R. R. Feb., Apr., May, Oct., 1884.
19	Fort Steilacoom	do	47 11	122 34	300	22 2	Nov., 1849	Feb., 1886	U. S. post hospital. Record much broken. Jan., 1852, to Dec., 1859, inclusive; Nov., 1861; Aug., Sept., 1865; May to Aug., 1866, inclusive; July, 1867; Apr., 1868, to Sept., 1873, inclusive.
		Adams.†							
20	Ainsworth	Whitman	.....	.....	.....	0 9	Feb., 1884	Oct., 1884	A. W. Gray.
21	Colfax	do	46 55	117 25	.....	2 2	Apr., 1881	May, 1883	Signal Service.
22	Almota	do	46 45	117 29	.....	2 4	Mar., 1881	June, 1883	Do.
23	Fort Simcoe	Yakima	46 25	120 50	.....	2 0	Apr., 1857	Apr., 1859	U. S. post hospital. Dec., 1857.
24	Kennewick	do	46 15	119 10	.....	2 1	Nov., 1884	Dec., 1886	A. W. Gray. Aug., 1885.
25	Fort Canby	Pacific	46 17	124 03	200	18 9	Aug., 1864	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Nov., 1864; Aug., Sept., Dec., 1865; Jan. to Aug., 1866, inclusive; Dec., 1867; July, 1868; May, 1869, to Apr., 1871, inclusive; June, 1871; Aug. to Dec., 1872, inclusive; July to Nov., 1873, inclusive; May, 1874.

† No data.

WASHINGTON TERRITORY—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
		Lewis.†							
		Franklin.†							
26	Pomeroy	Garfield	46 30	117 35	.....	2 1	June, 1881	June, 1883	Signal Service.
27	Walla Walla	Walla Walla	46 06	118 24	865	6 1	Jan., 1857	Mar., 1887	J. Straight, U. S. post hospital. Signal Service. Record broken. Mar., July, Aug., 1862; Mar., 1863; July, Aug., 1864; Aug., Sept., 1865; Nov., 1865, to Nov., 1866, inclusive; June, 1867, to Dec., 1869, inclusive; Feb., 1870, to Dec., 1872, inclusive.
28	Dayton	Columbia	46 17	117 59	.....	6 0	Dec., 1879	Nov., 1885	Signal Service.
		Astoria.†							
29	Cathlamet	Wahkiakum	46 15	123 12	40	2 5	Dec., 1871	Aug., 1876	Charles McCall. Record much broken. Jan. to May, 1872, inclusive; Oct. to Dec., 1873, inclusive; Oct. to Dec., 1874, inclusive.
		Cowlits.†							
30	Fort Cascades	Skamania	45 35	121 30	50	3 1	May, 1858	May, 1861	U. S. post hospital.
		Klikitat.†							
31	Union Ridge	Clark	45 50	122 45	.....	0 6	Jan., 1872	June, 1872	T. A. Whitcomb.
32	Fort Vancouver	....do	45 40	122 30	50	16 11	Dec., 1849	July, 1868	U. S. post hospital. Record much broken. Apr. to Dec., 1851, inclusive; July to Sept., 1852, inclusive; Jan., 1854; July, 1855; July, 1857; Jan., Mar., Aug., 1865; May to Aug., 1866, inclusive.

† No data.

WASHINGTON TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
1, Camp Semiahmoo	5.61	.....	.....	.....	.....	2.68	.....	.....	.....	.....	4.10	6.22	1859	1.98	1860
2, Whatcom	4.31	.....	.....	.....	.....	8.25	.....	.....	.....	.....	6.92	.....	.....	.....	.....
3, Fort Bellingham	3.04	3.72	1858	2.36	1859	2.59	3.43	1858	1.76	1859	3.52	4.29	1859	2.75	1858
4, Fort Colville	2.37	10.45	1875	1.54	1876	1.47	3.11	1879	0.60	1870	1.48	6.16	1875	0.75	1878
5, San Juan Island	3.31	5.60	1867	0.95	1869	2.80	4.50	1867	1.05	1869	2.18	7.50	1873	0.28	1869
6, Tatoosh Island	15.05	20.50	1871	10.95	1870	10.02	13.28	1885	6.04	1884	9.50	16.36	1887	2.34	1885
7, Neah Bay	17.49	25.70	1880	8.30	1855	13.42	21.01	1881	9.30	1855	11.41	23.83	1879	9.33	1880
8, Pysht	12.70	14.31	1885	11.29	1884	9.27	12.37	1885	7.81	1886	3.96	12.43	1887	1.90	1884
9, Port Angeles	5.98	8.17	1885	4.01	1884	3.98	4.68	1887	2.98	1886	2.00	3.65	1887	0.68	1885
10, Port Townsend	2.47	3.62	1878	0.66	1859	1.69	3.94	1879	0.37	1886	1.73	3.99	1875	0.11	1884
11, Fort Spokane	1.05	1.86	1886	0.29	1885	0.78	1.40	1885	0.41	1886	0.68	1.35	1887	0.00	1885
12, Spokane Falls	2.67	4.54	1882	1.79	1884	2.37	3.85	1881	0.61	1886	1.24	2.50	1887	0.72	1885
13, Blakely	6.46	11.65	1880	3.51	1887	5.98	10.30	1881	1.90	1886	5.03	13.70	1879	0.77	1885
14, Ellensburgh	1.76	2.62	1886	0.90	1885	0.91	1.98	1884	0.30	1886	0.29	0.62	1884	(T)	1885
15, Seattle	5.98	.....	.....	.....	.....	10.22	.....	.....	.....	.....	5.17	.....	.....	.....	.....
16, Vashon†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17, Olympia	8.72	19.69	1880	5.47	1884	8.35	16.28	1881	3.18	1883	5.39	14.44	1879	0.50	1885
18, New Tacoma	5.91	7.71	1886	4.93	1884	3.48	4.16	1885	2.29	1886	4.56	6.10	1885	1.01	1885
19, Fort Steilacoom	6.08	15.30	1851	1.37	1868	4.71	16.68	1867	1.00	1868	4.92	7.40	1867	0.00	1860
20, Ainsworth	.....	.....	.....	.....	.....	1.62	.....	.....	.....	.....	0.43	.....	.....	.....	.....
21, Colfax	3.58	4.32	1883	2.84	1882	2.32	3.49	1882	1.16	1883	1.72	1.73	1883	1.70	1882
22, Almota	0.80	1.15	1883	0.45	1882	1.58	2.88	1882	0.28	1883	1.29	1.74	1883	0.92	1882
23, Fort Simcoe	2.30	2.50	1859	2.11	1858	2.87	4.54	1858	1.19	1859	1.22	1.38	1859	1.06	1858
24, Kennewick	1.30	2.10	1886	0.51	1885	0.34	0.49	1885	0.19	1886	0.16	0.27	1886	0.04	1885
25, Fort Canby	9.10	22.28	1880	4.19	1875	6.19	15.08	1879	4.37	1865	7.78	15.68	1878	1.15	1885
26, Pomeroy	2.21	3.23	1883	1.19	1882	1.76	2.48	1882	1.05	1883	2.00	2.96	1883	1.05	1882
27, Walla Walla	2.24	11.63	1862	0.06	1863	4.44	10.30	1862	0.11	1863	1.48	3.90	1859	0.10	1867
28, Dayton	3.64	5.48	1883	2.29	1885	3.99	6.16	1882	1.17	1883	1.66	2.44	1883	0.05	1885
29, Cathlamet	11.98	15.80	1873	8.30	1875	7.05	9.90	1876	4.60	1875	13.98	18.50	1875	6.20	1874
30, Fort Cascades	8.56	10.59	1862	7.36	1860	8.74	11.06	1861	6.61	1860	7.47	13.83	1859	2.90	1800
31, Union Ridge	6.05	.....	.....	.....	.....	11.38	.....	.....	.....	.....	5.95	.....	.....	.....	.....
32, Fort Vancouver	5.96	13.29	1855	0.86	1866	5.58	6.90	1858	0.89	1866	3.87	9.60	1859	0.97	1867

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
1, Camp Semiahmoo	2.13	2.13	1860	2.12	1859	1.84	2.00	1860	1.69	1859	1.42	2.08	1860	0.75	1859
2, Whatcom	1.00	.....	.....	.....	.....	1.50	.....	.....	.....	.....	1.88	.....	.....	.....	.....
3, Fort Bellingham	2.10	2.69	1858	1.52	1859	1.78	1.94	1859	1.21	1858	1.19	1.46	1859	0.75	1857
4, Fort Colville	0.97	1.90	1879	0.00	1878	1.73	3.16	1877	0.84	1875	1.38	3.44	1877	0.22	1878
5, San Juan Island	1.74	4.50	1873	0.51	1874	1.09	4.05	1873	0.23	4870	3.58	25.75	1873	0.06	1872
6, Tatoosh Island	4.55	8.51	1887	0.37	1885	5.74	12.09	1871	1.39	1869	2.88	5.00	1871	1.12	1887
7, Neah Bay	5.33	11.70	1866	3.52	1880	4.18	7.14	1879	1.27	1864	3.70	7.50	1866	1.27	1880
8, Pysht	2.93	4.49	1886	1.13	1885	2.45	2.90	1884	1.81	1886	2.35	2.55	1884	2.17	1885
9, Port Angeles	1.48	2.67	1886	0.71	1885	1.22	2.11	1887	0.65	1884	1.13	1.75	1884	0.67	1885
10, Port Townsend	1.32	2.98	1883	0.12	1875	1.47	3.40	1885	0.63	1882	1.30	2.62	1868	0.15	1859
11, Fort Spokane	1.00	1.82	1887	0.10	1885	0.84	1.55	1885	0.00	1884	1.31	2.20	1887	0.89	1885
12, Spokane Falls	1.51	2.84	1882	0.27	1885	1.17	2.11	1883	0.50	1881	1.66	3.40	1885	0.57	1886
13, Blakely	3.08	5.96	1883	0.25	1885	2.59	5.00	1879	0.55	1884	1.34	3.40	1879	0.12	1883
14, Ellensburgh	0.76	1.26	1884	0.03	1885	0.68	1.18	1885	0.17	1884	0.52	0.57	1885	.....	.....
15, Seattle	2.15	.....	.....	.....	.....	3.25	.....	.....	.....	.....	0.36	.....	.....	.....	.....
16, Vashon†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17, Olympia	3.80	10.78	1883	0.39	1885	2.84	4.72	1879	1.36	1878	1.15	1.93	1881	0.21	1888
18, New Tacoma	2.70	3.97	1887	0.47	1885	2.72	3.42	1887	1.84	1886	1.34	2.81	1884	0.49	1885
19, Fort Steilacoom	2.87	6.74	1867	0.26	1857	1.67	3.85	1858	0.39	1864	1.58	4.93	1861	0.25	1860
20, Ainsworth	0.67	.....	.....	.....	.....	0.07	.....	.....	.....	.....	0.90	.....	.....	.....	.....
21, Colfax	2.34	3.02	1882	1.67	1881	1.06	1.20	{1882, 1883}	0.77	1881	0.60	1.08	1881	0.12	1882
22, Almota	1.77	2.71	1882	0.95	1883	1.04	1.57	1883	1.60	1881	0.25	0.70	1881	0.01	1882
23, Fort Simcoe	0.33	0.50	1859	0.00	1857	0.29	0.54	1858	0.04	1857	0.26	0.48	1858	0.04	1857
24, Kennewick	0.10	0.20	1886	(T)	1885	0.72	1.38	1885	0.05	1886	0.62	0.93	1885	0.30	1886
25, Fort Canby	4.58	8.30	1868	1.07	1873	3.16	9.02	1875	0.70	1873	2.26	6.25	1874	(T)	1883
26, Pomeroy	1.88	2.41	1882	1.36	1883	2.10	2.37	1883	1.83	1882	0.64	0.27	1882	0.02	1883
27, Walla Walla	1.34	2.38	1859	0.11	1863	2.08	5.78	1862	0.08	1863	1.20	2.78	1862	0.00	1863
28, Dayton	2.58	4.08	1882	0.06	1885	1.99	3.08	1885	0.45	1881	1.28	2.20	1885	0.08	1883
29, Cathlamet	4.95	6.50	1876	3.00	1874	3.68	5.30	1875	1.60	1873	2.72	4.50	1875	1.60	1872
30, Fort Cascades	5.83	8.87	1861	3.14	1859	4.51	5.52	1860	2.43	1859	1.70	3.40	1858	0.63	1859
31, Union Ridge	3.50	.....	.....	.....	.....	1.60	.....	.....	.....	.....	1.82	.....	.....	.....	.....
32, Fort Vancouver	2.47	6.56	1852	0.37	1857	2.36	5.44	1861	0.50	1850	1.94	3.26	1856	0.16	1859

†No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

WASHINGTON TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Maximum.	
	Ins.	Ins.	Yrs.	Ins.	Yrs.	Ins.	Ins.	Yrs.	Ins.	Yrs.	Ins.	Ins.	Yrs.	Ins.	Yrs.
1, Camp Semiahmoo	0.68	.....	.....	.....	.....	0.80	.....	.....	.....	.....	3.91	.....	.....	.....	.....
2, Whatcom	0.62	.....	.....	.....	.....	0.62	.....	.....	.....	.....	.....	.....	.....	.....	.....
3, Fort Bellingham	0.43	0.54	1859	0.33	1857	1.20	2.16	1858	0.24	1857	2.23	2.81	1857	1.66	1858
4, Fort Colville	1.26	3.74	1878	0.86	1876	0.62	1.25	1877	0.30	1876	0.49	1.74	1877	0.36	1879
5, San Juan Island	0.47	1.37	1867	0.06	1872	0.55	1.43	1874	0.02	1872	1.68	5.79	1874	0.10	1868
6, Tatoosh Island	1.78	6.52	1886	0.17	1885	2.81	5.49	1884	0.12	1885	5.58	9.60	1885	3.30	1869
7, Neah Bay	2.12	6.10	1863	0.30	1865	2.51	5.84	1879	0.20	1863	7.09	13.30	1865	2.50	1866
8, Pysht	0.94	1.83	1886	0.26	1885	1.00	2.42	1884	0.00	1885	6.00	9.44	1885	4.17	1886
9, Port Angeles	0.37	0.56	1887	0.03	1885	0.65	1.94	1884	0.00	1885	1.73	3.25	1885	1.15	1887
10, Port Townsend	0.55	1.51	1879	0.00	{1868 / 1875}	0.70	2.12	1879	0.00	1885	0.99	2.10	1885	0.16	1882
11, Fort Spokane	0.26	0.66	1884	0.00	1885	0.23	0.65	1887	0.00	1886	1.03	1.49	1884	0.47	1886
12, Spokane Falls	0.91	2.25	1881	0.00	1883	0.43	1.26	1887	0.14	1882	1.29	2.55	1881	0.08	1883
13, Blakely	0.99	2.55	1879	0.10	{1884 / 1887}	0.73	2.45	1881	0.02	1887	2.11	4.27	1885	0.75	1881
14, Ellensburgh	0.58	1.16	1884	0.01	1885	(T)	(T)	1884	(T)	1885	0.36	0.39	1885	0.33	1884
15, Seattle	0.55	.....	.....	.....	.....	1.90	.....	.....	.....	.....	4.10	.....	.....	.....	.....
16, Vashon	0.10	.....	.....	.....	.....	0.36	.....	.....	.....	.....	1.85	.....	.....	.....	.....
17, Olympia	0.87	2.62	1879	(T)	1883	0.67	2.11	1879	0.00	1885	3.10	6.64	1877	1.08	1880
18, New Tacoma	0.90	1.80	1884	0.14	1887	0.43	1.29	1884	0.00	1885	2.53	3.21	1884	2.13	1886
19, Fort Steilacoom	0.48	1.51	1863	0.00	1860	1.04	4.47	1858	0.00	1850	2.27	4.72	1862	0.30	1867
20, Ainsworth	0.23	.....	.....	.....	.....	0.35	.....	.....	.....	.....	0.67	.....	.....	.....	.....
21, Colfax	0.75	1.20	1881	0.30	1882	0.32	0.62	1881	0.03	1882	1.14	1.66	1881	0.62	1882
22, Almota	0.70	0.79	1881	0.60	1882	0.07	0.14	1881	0.00	1882	1.11	2.17	1881	0.05	1882
23, Fort Simcoe	0.07	0.11	1857	0.03	1858	0.52	1.04	1858	0.00	1857	0.44	0.85	1858	0.03	1857
24, Kennewick	0.04	0.07	1886	(T)	1885	(T)	.....	.....	.....	.....	0.25	0.41	1885	0.09	1886
25, Fort Canby	2.02	7.90	1867	(T)	1883	0.91	2.64	1877	(T)	1883	3.37	8.42	1877	0.40	1868
26, Pomeroy	0.56	0.57	1881	0.54	1882	0.10	0.18	1881	0.02	1882	0.82	1.13	1871	0.51	1882
27, Walla Walla	0.50	2.44	1860	0.02	1861	0.37	0.00	1858	0.00	1861	0.99	4.31	1862	0.36	1860
28, Dayton	0.58	1.68	1880	0.00	1883	0.35	1.29	1880	0.07	1885	0.87	1.47	1881	0.09	1883
29, Cathlamet	0.95	1.60	1876	0.30	{1872 / 1874}	1.92	1.66	1874	0.50	1872	1.52	2.40	1874	0.50	1872
30, Fort Cascades	0.47	1.24	1860	0.00	1858	0.94	1.06	1859	0.76	1860	5.65	7.75	1859	1.88	1860
31, Union Ridge†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32, Fort Vancouver	1.32	8.35	1850	0.00	1854	0.52	1.72	1854	0.00	{1850 / 1855 / 1867}	1.65	4.37	1858	0.00	1854

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	Ins.	Yrs.	Ins.	Yrs.	Ins.	Ins.	Yrs.	Ins.	Yrs.	Ins.	Ins.	Yrs.	Ins.	Yrs.	Ins.	Ins.	Yrs.	Ins.	Yrs.
1, Camp Semiahmoo	7.88	.....	.....	.....	.....	2.57	.....	.....	.....	.....	0.00	.....	.....	.....	.....	33.62	.....	.....	.....	.....
2, Whatcom	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
3, Fort Bellingham	2.21	2.39	1858	2.02	1857	3.36	4.03	1858	2.70	1857	6.21	6.92	1857	5.49	1858	29.66	.....	.....	.....	.....
4, Fort Colville	1.03	4.18	1875	0.77	1878	1.86	4.72	1876	1.03	1879	1.49	2.70	1875	0.60	1878	16.15	28.66	76–77*	11.54	72–73*
5, San Juan Island	2.23	8.25	1866	0.30	1869	3.98	9.21	1874	1.28	1873	4.73	9.00	1872	1.30	1865	28.34	37.44	66–67*	12.91	68–69*
6, Tatoosh Island	6.45	9.03	1884	1.50	1869	15.46	20.70	1869	2.32	1887	14.60	25.84	1886	10.14	1885	94.42	12.86	86–87*	72.43	84–85*
7, Neah Bay	8.87	13.20	1863	3.50	1864	12.15	27.60	1865	1.40	1874	16.27	27.30	1863	8.48	1878	105.25	140.90	65–66*	80.70	84–85*
8, Pysht	6.74	9.53	1884	4.85	1886	7.31	13.07	1885	3.54	1886	11.56	21.61	1886	5.35	1884	67.21	25.41	85–86*	59.51	84–85*
9, Port Angeles	2.73	4.23	1885	1.88	1886	3.08	4.52	1887	1.46	1886	4.21	7.71	1886	3.07	1885	28.56	32.35	86–87*	26.83	84–85*
10, Port Townsend	1.57	2.61	1886	0.36	1874	2.26	4.42	1875	0.39	1874	2.42	6.18	1880	0.67	1874	18.47	21.66	75–76*	11.66	73–74*
11, Fort Spokane	2.13	3.00	1885	1.55	1883	0.98	2.07	1885	0.19	1884	1.49	3.83	1886	0.43	1884	11.84	15.47	86–87*	9.05	84–85*
12, Spokane Falls	2.07	4.81	1882	0.80	1885	1.92	4.25	1885	0.59	1884	2.58	3.87	1886	0.21	1883	19.82	24.03	81–82*	15.91	85–86*
13, Blakely	3.76	6.20	1884	1.45	1887	4.78	9.27	1878	9.27	1880	7.93	17.25	1879	3.27	1878	44.83	65.03	78–79*	33.96	83–84*
14, Ellensburgh	0.38	0.71	1884	0.06	1886	0.92	1.69	1885	0.16	1884	1.81	2.07	1884	.....	.....	8.97	.....	.....	.....	.....
15, Seattle	3.25	.....	.....	.....	.....	8.70	.....	.....	.....	.....	4.40	.....	.....	.....	.....	50.03	.....	.....	.....	.....
16, Vashon	1.50	.....	.....	.....	.....	3.20	.....	.....	.....	.....	10.67	.....	.....	.....	.....	.....	.....	.....	.....	.....
17, Olympia	4.73	8.18	1881	7.51	1887	6.85	19.88	1877	1.37	1884	9.61	16.66	1880	5.14	1883	56.08	81.28	77–78*	34.97	84–85*
18, New Tacoma	2.56	3.78	1886	1.44	1887	3.88	8.22	1885	1.44	1886	7.84	10.26	1887	4.88	1884	38.86	53.75	86–87*	41.03	85–86*
19, Fort Steilacoom	3.05	4.63	1859	0.67	1865	5.50	9.42	1849	0.88	18 2	6.70	13.01	1857	2.62	1850	40.96	55.13	57–58*	31.17	59–60*
20, Ainsworth	0.56	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21, Colfax	4.78	6.81	1882	2.75	1881	2.10	2.59	1881	1.60	1882	4.60	6.42	1882	2.79	1881	25.31	.....	.....	.....	.....
22, Almota	2.61	3.37	1882	1.95	1881	1.32	1.44	1882	1.20	1881	2.00	2.51	1882	1.41	1881	14.59	.....	.....	.....	.....
23, Fort Simcoe	0.57	0.83	1858	0.32	1857	0.79	0.84	1858	0.73	1857	0.95	0.95	1858	.....	.....	10.61	.....	.....	.....	.....
24, Kennewick	0.72	1.17	1886	0.26	1875	0.73	6.99	1885	0.04	1886	2.08	2.28	1886	0.86	1884	7.06	.....	.....	.....	.....
25, Fort Canby	6.23	14.80	1867	1.00	1874	10.53	19.07	1866	3.58	1880	10.84	17.35	1885	2.80	1876	67.68	86.67	66–67*	56.24	83–84*
26, Pomeroy	2.86	3.76	1882	1.96	1881	1.60	1.63	1881	1.56	1882	8.80	5.46	1882	2.14	1881	20.33	.....	.....	.....	.....
27, Walla Walla	1.48	2.44	1860	0.05	1862	3.00	6.04	1861	0.00	1862	2.57	12.81	1861	0.04	1862	20.69	28.96	60–61*	16.44	58–59*
28, Dayton	2.54	4.41	1882	1.23	1885	2.19	3.11	1883	0.25	1884	4.98	7.93	1880	2.37	1881	26.76	30.12	80–81*	23.66	83–84*
29, Cathlamet	5.30	8.50	1875	2.10	1872	9.65	13.00	1875	6.30	1872	7.90	13.00	1871	3.00	1875	71.24	76.00	75–76*	68.70	72–73*
30, Fort Cascades	5.15	5.78	1858	4.38	1859	9.84	12.05	1860	7.20	1859	6.05	8.13	1858	4.13	1859	64.64	67.10	58–59*	54.10	59–60*
31, Union Ridge†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32, Fort Vancouver	2.38	4.81	1856	0.68	1865	5.14	11.57	1855	0.85	1862	7.18	16.04	1867	1.20	1850	38.37	45.65	57–58*	22.29	66–67*

†No data. * Seasonal rain-fall, September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

OREGON.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	From—	To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
33	Fort Stevens	Clatsop	46 31	124 01	12	14 6	Nov., 1865	Feb., 1883	U. S. post hospital. Record much broken. Jan., July, Aug., 1866; Oct. to Dec., 1868, inclusive; Jan. to Mar., 1869, inclusive; July, 1869, to June, 1871, inclusive; Sept., 1882.
34	Astoria	do	46 10	123 48	52	28 4	Aug., 1850	Dec., 1887	U. S. post hospital. L. Wilson, Signal Service. Record much broken. Oct., 1851, to Aug., 1853; Oct., 1876, to Nov., 1883, inclusive.
35	Umatilla	Columbia.† Umatilla	45 55	119 22	.....	5 8	Aug., 1877	Mar., 1883	Signal Service.
36	Pendleton	do	45 40	118 50	.....	0 5	Feb., 1886	Aug., 1886	Rev. O. W. Lucas. June, July, 1886.
37	La Grande	Union Morrow.† Gilliam.† Tillamook.† Washington.†	45 22	118 18	.....	1 6	June, 1886	Nov., 1887	J. K. Romig.
38	Willamette	Multnomah	45 40	122 45	120	0 3	May, 1861	Jan., 1864	T. H. Crawford, P. L. Willis. June, 1861, to Sept., 1863, inclusive; Nov., Dec., 1863.
39	East Portland	do	45 43	122 41	.....	3 7	Mar., 1884	Nov., 1887	George Wigg. Mar., 1885; Aug., 1886.
40	Portland	do	45 32	122 43	45	16 2	Nov., 1871	Dec., 1887	Signal Service.
41	Hood River	Wasco	45 42	121 28	500	0 2	Sept., 1872	Oct., 1872	Charles E. Coe.
42	Fort Dallas	do	45 36	120 55	350	12 8	July, 1850	Mar. 1866	U. S. post hospital. Record much broken. Apr., 1851, to Sept., 1852, inclusive; July, 1855; Jan., 1856; May to Dec., 1856, inclusive; Apr., 1859; June, 1862; Mar., Apr., July, Aug., 1864; Jan., Dec., 1865; Jan., Feb., 1866.
43	Mount Hood	do	45 40	121 30	400	0 11	Oct., 1872	Aug., 1873	Thomas M. Whitcomb.
44	Oregon City	Clackamas	45 22	122 35	200	3 0	Jan., 1851	Mar., 1859	G. H. Atkinson. Jan., 1852, to Mar., 1857, inclusive.
45	Fort Yamhill	Yamhill	45 05	123 32	.....	9 3	Nov., 1856	Apr., 1866	U. S. post hospital. Nov., 1861; May, 1863; Apr., 1864.
46	Mount Angel	Marion	45 06	122 50	.....	1 5	June, 1886	Oct., 1887	Barnabas Held.
47	Auburn	Baker	44 35	118 06	3,300	0 4	June, 1864	Aug., 1865	Lieutenant Glassford. Record much broken. Sept. to Dec., 1864, inclusive; Jan. to July, 1865, inclusive.
48	Camp Logan	do	44 15	118 12	5,600	0 8	Nov., 1867	Oct., 1868	U. S. post hospital. Dec., 1867; Jan., Feb., Mar., 1868.
49	Eola	Polk	44 57	122 54	500	17 3	Jan., 1870	Nov., 1887	Thomas Pearce. Record much broken. July, 1870; Sept., Dec., 1873; July, 1874; July, 1875; June, 1878; Feb., 1881; July, 1885.
50	Fort Hoskins	do	44 37	123 18	.....	6 9	Dec., 1856	Sept., 1864	U. S. post hospital. Jan., 1860, to Jan., 1861, inclusive.
51	Camp Watson	Grant	44 24	119 32	.....	1 7	June, 1867	Mar. 1869	U. S. post hospital. Aug., 1867; Jan., Mar., 1868
52	Camp Harney	do	43 30	118 30	4,200	11 4	Jan., 1868	May, 1880	U. S. post hospital. Nov., 1868; June, 1870; Jan. to Oct., 1874, inclusive; July, 1876
53	Albany	Linn	44 35	123 03	600	10 3	Jan., 1866	Dec., 1887	John Briggs. Record much broken. June, Sept., 1866; June, Aug., Oct., Nov., Dec., 1867; Feb., 1868, to Mar., 1879, inclusive.
54	Yaquina Light-House.	Crook.† Benton	45 39	124 02	.....	0 4	Sept., 1887	Dec., 1887	John G. Jessup.
55	Corvallis	do	44 32	123 04	.....	0 1	Jan., 1867	.....	U. S. post hospital.
56	Blockhouse	do	44 25	123 30	.....	1 8	Mar., 1858	Dec., 1859	U. S. post hospital. July, Aug., 1859.
56½	Eugene City	Lane	45 03	123 06	.....	3 1	Sept., 1877	Sept., 1880	
57	Gardiner	Douglas	43 45	124 05	.....	0 1	Dec., 1886		Thomas C. Mackey.
58	Fort Umpqua	do	43 42	124 09	8	5 10	Aug., 1856	May, 1862	U. S. post hospital.
59	Roseburg	do	43 10	123 20	.....	10 5	July, 1877	Dec., 1887	Signal Service. Sept., 1884.
60	Empire City	Coos	43 22	124 10	.....	5 10	Sept., 1880	June, 1886	Lieutenant Glassford.
61	Bandon	do	43 05	124 15	.....	3 11	Jan., 1884	Dec., 1887	George Bennett. July, 1885.
62	Fort Klamath	Klamath	42 41	121 55	4,200	15 1	Dec., 1864	Nov., 1887	U. S. post hospital. Signal Service. Record much broken. Oct., 1865; Apr., 1866, to July, 1873, inclusive; July, 1874; Jan., 1875; June, 1878; Mar., June, 1881; June, 1882.

†No data.

OREGON—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
63	Klamath Agency	Klamath	42 39	121 40	.....	0 11	Feb., 1884	Mar., 1885	Will Nickerson. Sept. to Nov., 1884.
64	Linkville	do	42 15	121 45	.....	3 9	Feb., 1884	Dec., 1887	Signal Service. June, Sept., 1885.
65	Camp Warner	Lake	42 28	119 42	.....	5 3	Aug., 1868	July, 1874	U. S. post hospital. Sept., 1868, to May, 1869, inclusive.
66	Lakeview	do	42 12	120 12	5,060	3 10	Nov., 1883	Nov., 1887	Signal Service. May, 1884; Feb., June, 1885.
67	Port Orford	Curry	42 44	124 29	50	2 10	June, 1852	July, 1856	U. S. post hospital.
68	Fort Lane	Jackson	42 24	122 30	2,000	1 4	Jan., 1855	July, 1856	U. S. post hospital. July to Sept., 1855, inclusive.
69	Ashland	do	42 12	122 28	1,940	3 10	Feb., 1884	Nov., 1887	Signal Service.
		Josephine.†							

† No data.

OREGON—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
33, Fort Stevens	10.78	20.84	1880	1.39	1868	10.72	19.19	1879	4.75	1868	11.77	22.60	1879	2.56	1857
34, Astoria	13.94	27.00	1851	3.,8	1868	8.76	17.57	1872	3.18	1869	9.93	21.32	1859	1.51	1885
35, Umatilla	1.40	2.55	1883	0.56	1880	1.14	1.92	1881	0.54	1880	0.89	1.72	1878	0.32	1882
36, Pendleton						0.77					0.69				
37, La Grande	5.18					0.70					2.25				
38, Willamette	8.39														
39, East Portland	6.45	11.11	1887	3.16	1885	5.69	9.00	1887	2.00	1886	3.62	6.34	1887	1.18	1884
40, Portland	7.25	13.71	1883	2.75	1877	6.95	13.36	1881	1.96	1886	7.60	12.76	1873	0.63	1885
41, Hood River†															
42, Fort Dallas	4.36	7.08	1857	2.68	1861	2.39	9.41	1858	0.22	1864	2.23	6.07	1859	0.62	1863
43, Mount Hood	16.21					5.22					10.40				
44, Oregon City	7.93	13.63	1851	4.05	1858	5.17	8.28	1859	3.43	1851	7.15	10.72	1859	4.87	1858
45, Fort Yamhill	9.51	12.50	1862	5.00	1865	7.31	10.57	1859	1.72	1864	7.06	14.19	1862	3.79	1863
46, Mount Angel	15.36					3.72					10.30				
47, Auburn†															
48, Camp Logan†															
49, Eola	5.95	9.86	1887	2.53	1875	5.97	13.24	1872	0.93	1875	5.37	10.66	{1877 1879}	0.55	1885
50, Fort Hoskins	12.73	10.58	1863	8.67	1862	10.02	14.96	1863	2.60	1864	9.07	15.50	1850	1.89	1858
51, Camp Watson	1.72					0.86	1.19	1868	0.52	1869	1.78				
52, Camp Harney	1.51	3.15	1873	0.56	1880	1.10	3.11	1878	0.45	1875	1.31	3.60	1877	0.30	1873
53, Albany	8.63	14.45	1867	2.22	1882	6.77	13.08	1881	1.36	1883	4.57	11.71	1886	0.81	1885
54, Yaquina Light-House†															
55, Corvallis	0.30														
56, Blockhouse	12.70					12.30					16.06				
56½, Eugene City	8.74	13.15	1880	6.40	1879	5.61	6.22	1878	4.77	1880	6.11	8.39	1879	3.52	1880
57, Gardiner†															
58, Fort Umpqua	10.28	13.53	1857	7.65	1865	9.91	15.35	1859	5.77	1860	9.73	16.09	1862	4.20	1860
59, Roseburg	6.45	11.60	1881	2.98	1883	4.72	8.19	1881	1.17	1883	3.33	8.60	1879	0.28	1885
60, Empire City	6.81					7.41					3.11				
61, Bandon	10.33	16.28	1887	4.60	1884	8.24	12.45	1885	5.17	1887	4.70	7.07	1887	0.63	1885
62, Fort Klamath	3.51	7.10	1866	1.74	1877	2.75	5.98	1887	0.28	1875	2.79	5.78	1877	0.24	1885
63, Klamath Agency	2.96					2.64	2.83	1885	2.45	1884	0.84	1.48	1884	0.19	1885
64, Linkville	3.24	5.31	1886	2.18	1887	1.78	2.33	1885	1.21	1886	1.44	3.13	1884	0.49	1887
65, Camp Warner	1.61	2.51	1874	0.80	1871	1.97	3.44	1872	1.23	1871	1.21	2.28	1874	0.65	1873
66, Lakeview	2.59	3.15	1886	2.15	1887	1.99	2.49	1884	1.26	1886	1.58	4.12	1884	0.20	1885
67, Port Oxford	9.08	11.81	1853	7.62	1856	5.79	6.65	1853	4.67	1856	6.17	9.84	1855	2.21	1856
68, Fort Lane	2.82	4.38	1885	1.26	1856	0.92	1.27	1855	0.58	1856	1.85	33.26	1852	0.44	1856
69, Ashland	4.02	4.98	1887	2.44	1885	2.46	4.55	1885	0.95	1884	1.39	3.14	1884	0.01	1885

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
33, Fort Stevens	4.72	7.22	1876	2.27	1878	3.66	5.20	1879	0.88	1867	2.24	6.90	1872	0.29	1869
34, Astoria	5.30	9.32	1854	0.20	1857	3.76	6.91	1871	1.22	1864	2.88	6.11	1861	0.06	1869
35, Umatilla	0.82	1.49	1879	0.01	1878	0.64	1.96	1879	0.06	1881	0.36	0.96	1881	0.02	1878
36, Pendleton	0.63					1.05									
37, La Grande	1,29					0.56					1.71	2.90	1887	0.52	1886
38, Willamette						2.54									
39, East Portland	2.32	3,04	1886	1.08	1885	0.83	1.15	1885	0.09	1884	1.08	3.11	1885	0.40	1886
40, Portland	3.27	7.88	1883	1.12	1885	2.58	6.60	1879	0.92	1872	1.49	2.96	1873	0.08	1873
41, Hood River†															
42, Fort Dallas	0.74	1.46	1861	0.00	1857	0.94	2.61	1862	0.00	1865	0.53	2.08	1861	0.08	1865
43, Mount Hood	2.82					1.03					2.73				
44, Oregon City	1.92	3.13	1851	0.79	1857	3.37	4.58	1851	2.54	1857	1.41	2.04	1858	0.40	1851
45, Fort Yamhill	3.03	6.06	1861	0.10	1857	2.41	3.87	1858	0.80	1864	1.61	5.92	1861	0.09	1859
46, Mount Angel	6.93					4.43					3.32	4.36	1886	2.29	1887
47, Auburn											2.37				
48, Camp Logan	4.75					5.50					6.20				
49, Eola	2.86	6.51	1853	1.08	1872	2.00	5.94	1879	0.42	1884	1.16	2.41	1877	0.05	1883
50, Fort Hoskins	2.86	7.34	1861	0.09	1857	2.76	6.92	1858	0.83	1863	1.92	5.06	1861	0.11	1859
51, Camp Watson	1.39					1.21					1.95	3.70	1868	0.19	1867
52, Camp Harney	0.97	2.74	1879	0.10	1872	0.96	2.01	1868	0.10	1870	0.75	2.20	1868	0.00	1871
53, Albany	3.66	6.58	1883	1.38	1885	2.81	5.70	1879	0.89	1884	1.28	3.33	1884	0.22	1883
54, Yaquina Light-House†															
55, Corvallis†															
56, Blockhouse	4.82					5.39					2.24				
56½, Eugene City	2.27	3.63	1880	1.12	1878	3.61	6.19	1879	1.97	1878	5.44	0.58	1880	0.21	1878
57, Gardiner†															
58, Fort Umpqua	4.01	7.47	1861	0.63	1857	3.09	4.20	1861	1.40	1862	2.18	6.02	1861	0.20	1860
59, Roseburg	3.10	5.14	1882	1.07	1881	1.79	4.63	1879	0.73	1881	0.96	2.92	1881	0.01	1883
60, Umpire City	2.94					1.60					1.28				
61, Bandon	4.01	6.47	1887	0.97	1885	2.24	5.11	1887	0.43	1884	1.00	1.78	1885	0.47	1887
62, Fort Klamath	1.30	2.77	1880	0.20	1865	1.22	2.25	1879	0.50	1878	0.85	3.14	1884	0.00	1883
63, Klamath Agency	1.82					1.56					2.28				
64, Linkville	2.10	2.85	1885	1.50	1886	1.35	1.72	1884	0.54	1887	1.46	2.22	1884	0.94	1887
65, Camp Warner	1.21	1.95	1873	0.73	1861	1.89	3.23	1872	1.00	1374	0.63	1.35	1874	0.14	1871
66, Lakeview	1.60	2.35	1884	0.92	1885	1.16	1.47	1885	0.97	1886	2.98	6.53	1884	1.02	1886
67, Port Orford	7.53	11.30	1856	5.17	1855	4.56	8.60	1855	1.89	1853	1.33	1.85	1856	0.33	1852
68, Fort Lane	1.75	2.53	1856	0.98	1855	1.62	1.91	1856	1.33	1855	0.72	1.03	1855	0.41	1856
69, Ashland	2.22	3.39	1887	1.33	1884	1.71	3.74	1885	0.76	1884	1.02	2.40	1885	0.24	1884

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

OREGON—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
33, Fort Stevens	2.08	4.58	1867	0.17	1875	1.83	6.25	1872	0.00	1868	3.04	5.35	1872	0.31	1868
34, Astoria	1.28	3.55	1876	0.00	1851	1.37	5.87	1869	0.00	1850	3.34	8.49	1863	0.33	1868
35, Umatilla	0.32	0.53	1881	0.04	1882	0.34	1.14	1880	0.00	1882	0.78	1.20	1882	0.18	1880
36, Pendleton†															
37, La Grande	0.26	0.33	1887	0.18	1886	0.30	0.49	1887	0.10	1886	0.48	0.55	1874	0.41	1886
38, Willamette†															
39, East Portland	0.54	2.04	1884	0.04	1886	0.02	0.03	'84 '87	0.00	1885	2.08	4.08	1887	0.04	1886
40, Portland	0.62	1.80	1884	0.00	1883	0.64	2.11	1881	0.00	1885	1.79	4.25	1884	0.00	1873
41, Hood River											1.75				
42, Fort Dallas	0.36	1.38	1860	0.00	'58 '61	0.27	0.75	1858	0.00	1855	1.46	5.77	1859	0.16	1864
43, Mount Hood	0.40					0.45									
44, Oregon City	0.15	0.35	1857	0.00	1851	0.91	1.90	1851	0.44	1858	2.24	4.04	1858	0.72	1857
45, Fort Yamhill	0.36	1.02	1863	0.00	1858	0.42	1.08	1859	0.10	1857	2.69	5.75	1859	0.55	1861
46, Mount Angel	2.34	4.68	1886	0.00	1887	0.16	0.33	1887	0.00	1886	10.7 †	19.17†	1886	2.35	1887
47, Auburn	1.00					1.71									
48, Camp Logan	0.00					0 12					0.30				
49, Eola	0.54	2.29	1884	0.00	1883	0.37	1.79	1879	0.00	(1)	1.74	6.59	1884	0.13	1875
50, Fort Hoskins	0.37	0.85	1862	0.02	1861	0.36	1.18	1859	0.03	1861	3.18	7.08	1859	0.55	1861
51, Camp Watson	0.11	0.22	1867	0.00	1868	0 00					0.62	0.94	1867	0.30	1868
52, Camp Harney	0.29	0.96	1873	0.00	(1)	0.20	1.00	1878	0.00	(1)	0.23	0.63	1872	0.00	(1)
53, Albany	0.57	1.87	1884	0.00	'85 '87	0.54	1.62	1881	0.00	1885	2.02	5.16	1884	0.41	1882
54, Yaquina Light-House											2.57				
55, Corvallis†															
56, Blockhouse	0.30					0.00					10.12	13.80	1859	6.44	1858
56½, Eugene City	0.47	1.00	1878	0.03	1880	0.64	1.04	1879	0.44	1877	1.89	3.28	1877	0.85	1880
57, Gardiner†															
58, Fort Umpqua	0.30	0.80	1860	0.00	'57 '61	0.36	1.13	1859	0.00	1856	2.27	6.30	1859	0.00	1856
59, Roseburg	0.56	2.20	1886	0.01	'80 '83	0.29	1.47	1879	0.00	1882	0.82	1.40	1877	0.33	1886
60, Empire City	0.42					0.24					1.24				
61, Bandon	1 01	1.84	1860	0.15	1887	0 08	0.19	1886	0.02	1885	2.27	5.12	1884	0.49	1886
62, Fort Klamath	0.45	1.24	1881	(T)	1883	0.30	1.40	1865	0.00	1882	0.56	2.30	1873	0.00	'75 '86
63, Klamath Agency	0.24					0.02									
64, Linkville	0.58	1.51	1886	(T)	1885	0.10	0.42	1887	0.00	(1)	0.21	0.58	1884	0.00	1886
65, Camp Warner	0.28	0.85	1873	0.00	'72 '74	0.19	0.80	1872	0.00	'68 '69	0.60	1.76	1872	0.00	1870
66, Lakeview	0.32	0.60	1884	0.11	1886	0.54	1.19	1884	0.00	1886	0.51	1.92	1884	0.00	1886
67, Port Orford	0.56	1.38	1856	0.00	1854	1.22	2.56	1854	0.10	1855	2.34	4.49	1855	0.19	1854
68, Fort Lane	0.00														
69, Ashland	0.58	1.69	1886	0.02	1885	0.01	0.04	1887	0.00	(1)	1.03	2.28	1884	0.00	1886

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
33, Fort Stevens	7.22	14.30	1875	1.76	1871	11.79	22.21	1877	4.54	1880	11.80	21.69	1867	2.83	1878	82.65	102.41	75–76*	68.48	74–75*
34, Astoria	4.89	13.38	1875	1.32	1869	9.80	19.12	1869	2.44	1862	12.87	24.73	1867	6.16	1859	77.12	112.49	75–76*	59.85	68–69*
35, Umatilla	0.88	1.79	1882	0.33	1879	0.93	1.92	1877	0.54	1880	1.31	3.65	1880	0.36	1878	9.63	12.70	80–81*	6.70	81–82*
36, Pendleton†																				
37, La Grande	1.00	1.50	1886	0.51	1887	1.24	1.32	1887	1.17	1886	4.64					19.61				
38, Willamette	1.76																			
39, East Portland	1.87	3.14	1884	0.06	1887	3.36	4.34	1884	1.00	1886	6.14	11.34	1886	2.97	1884	33.90				
40, Portland	3.94	11.63	1882	0.36	1874	6.25	15.77	1875	1.00	1886	8.31	20.14	1882	0.88	1876	49.76	69.13	75–76*	40.98	74–75*
41, Hood River	1.00																			
42, Fort Dallas	0.97	3.32	1858	0.15	1855	3.35	6.97	1861	0.20	1862	4.36	10.79	1856	0.63	1862	21.96	38.51	57–58*	10.27	62–63*
43, Mount Hood	2.65					4.74					6.85									
44, Oregon City	3.46	4.58	1851	1.26	1857	5.12	6.83	1857	4.09	1851	8.75	9.93	1858	7.70	1851	47.61				
45, Fort Yamhill	2.96	5.75	1860	1.30	1864	7.55	16.27	1865	0.90	1862	10.08	14.80	1856	1.86	1859	55.59	61.88	60–61*	43.91	64–65*
46, Mount Angel	3.20	4.39	1886	2.00	1887	2.84					12.45					75.81				
47, Auburn†																				
48, Camp Logan	0.70					6.70														
49, Eola	3.01	8.01	1876	0.30	1874	5.08	13.01	1877	1.45	1886	6.19	11.50	1880	0.84	1876	40.24	51.01	78–79*	33.94	83–84*
50, Fort Hoskins	3.36	6.67	1858	1.20	1857	8.34	18.10	1861	0.94	1862	11.73	18.97	1856	4.11	1859	66.70	80.20	58–59*	59.99	62–63*
51, Camp Watson	0.28					0.78					3.11					13.81				
52, Camp Harney	0.49	1.26	1875	0.00	(1)	1.57	3.34	1879	0.09	1870	1.42	4.42	1879	0.22	1877	10.80	15.04	77–78*	7.22	70–71*
53, Albany	3.29	7.07	1882	0.97	1887	4.44	8.40	1885	1.75	1886	7.05	11.64	1882	0.21	1887	46.13	52.24	80–81*	39.68	79–80*
54, Yaquina Light-House	2.26					6.06					7.02									
55, Corvallis†																				
56, Blockhouse	6.95	7.71	1858	6.20	1859	14.08	16.20	1859	11.95	1856	11.33	22.59	1858	0.07	1859	96.29				
56½, Eugene City	2.97	4.30	1877	1.78	1879	5.91	8.89	1877	4.35	1879	4.11	6.42	1879	2.87	1877	42.77	48.48	1878	42.49	1880
57, Gardiner†											13.97									
58, Fort Umpqua	3.66	7.05	1858	0.00	1856	9.71	18.05	1861	4.91	1856	11.89	18.95	1861	4.73	1859	67.41	79.82	58–59*	49.92	59–60*
59, Roseburg	2.68	5.96	1881	0.77	1880	3.73	8.76	1877	0.77	1880	6.65	9.20	1884	2.73	1878	35.08	44.68	77–78*	25.16	82–83*
60, Empire City	3.00					4.02					7.25					38.82				
61, Bandon	3.22	5.87	1886	1.43	1887	7.74	18.21	1885	2.27	1886	10.86	14.54	1887	11.97	1886	55.70				
62, Fort Klamath	1.57	4.51	1875	0.02	1873	3.57	8.57	1875	0.23	1886	3.58	8.68	1884	0.12	1876	22.45	33.10	75–76*	17.50	79–80*
63, Klamath Agency											10.58									
64, Linkville	1.02	1.77	1884	(T)	1887	1.32	3.76	1885	0.15	1884	2.38	2.97	1884	2.27	1886	16.98				
65, Camp Warner	0.23	0.77	1873	0.00	(1)	1.70	2.66	1869	0.83	1871	2.89	5.63	1871	1.57	1869	14.41	17.82	71–72*	10.21	70–71*
66, Lakeview	0.87	1.63	1884	0.01	1887	1.58	6.59	1885	0.02	1884	2.31	3.13	1886	1.29	1884	18.03				
67, Port Orford	7.31	11.10	1854	3.52	1855	10.27	14.18	1855	4.59	1854	14.43	20.00	1853	6.37	1854	70.59				
68, Fort Lane	0.32					3.37					6.55									
69, Ashland	1.34	1.65	1886	0.56	1887	2.53	8.02	1885	0.07	1884	4.65	5.97	1884	3.32	1885	22.96	27.98	85–86*	21.72	86–87*

† No data. * Seasonal rain-fall September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
70	Camp Lincoln	Del Norte	41 08	124 12	.....	2 8	Sept., 1866	May, 1869	William H. Hall, State engineer. Oct., 1867.
71	Crescent City	....do	41 45	124 12	50	5 3	Apr., 1881	June, 1886	Lieut. W. A. Glassford.
72	Fort Ter Waw	....do	41 30	124 10	.....	2 3	Apr., 1859	Oct., 1861	William H. Hall. June to Sept., 1861, inclusive.
73	Yreka	Siskiyou	41 45	122 32	2,635	14 8	Sept., 1871	Apr., 1886	Lieut. W. A. Glassford.
74	Scott Valley	....do	41 45	123 02	2,570	27 4	Aug., 1859	Dec., 1886	Lieut. W. A. Glassford. July (1885 or 1886†).
75	Fort Jones	....do	41 40	122 48	2,570	5 4	Jan., 1853	Aug., 1858	William H. Hall. Aug. and Sept., 1853, Sept., Oct., 1855.
76	Berryvale	....do	41 12	122 15	.....	1 11	Oct., 1881	Aug., 1883	William H. Hall.
77	Almaden	....do	.....	.....	.....	1 1	Nov., 1886	Nov., 1887	Central Pacific R. R.
78	Fort Bidwell	Modoc	41 51	120 05	4,680	20 7	Sept., 1866	Nov., 1887	Signal Service. William H. Hall. Record broken. Sept., 1866, to Nov., 1887, inclusive; July, 1868; Mar., Apr., 1869; Oct., 1874; Jan., Feb., 1879; June, Aug., 1885.
79	Little Hot Springs	....do	41 30	120 06	.....	1 4	Nov., 1885	Feb., 1887	Lieut. W. A. Glassford.
80	Fort Gaston	Humboldt	41 03	123 37	337	25 0	Jan., 1862	Nov., 1887	William H. Hall. Record broken. Apr., 1865; May to Aug., 1866, inclusive; Apr. to July, 1867, inclusive; July, 1868; Apr., 1876.
81	Blue Lake	....do	40 55	124 00	.....	2 3	June, 1884	Aug., 1886	Lieut. W. A. Glassford.
82	Arcata	....do	40 53	123 05	.....	1 4	June, 1886	Apr., 1887	Do.
83	Fort Humboldt	....do	40 46	124 09	50	11 2	Jan., 1854	Nov., 1866	U. S. post hospital. Jan., 1854, to Nov., 1866, inclusive; Feb., 1864; July, Aug., 1864; May to Aug., 1866, inclusive; Jan. to Dec., 1862, inclusive.
84	Humboldt Lighthouse.	....do	40 37	124 12	50	10 7	July, 1875	June, 1887	Lieut. W. A. Glassford. Record broken. Dec., 1876; Nov., 1877; Apr., June, Aug., Oct., 1878; Oct., 1882, to Feb., 1883, inclusive; June, 1883; Jan. to May, inclusive of 1885, 1886, or 1887.
85	Hydesville	....do	40 29	124 02	.....	3 0	Sept., 1883	Aug., 1886	Lieut. W. A. Glassford.
86	Cape Mendocino	....do	40 24	124 21	637	4 4	Aug., 1882	Dec., 1886	Signal Service. Dec., 1882.
87	Orleans	....do	.....	.....	.....	2 0	Nov., 1884	Dec., 1886	Lieut. W. A. Glassford. Unable to find missing months.
88	Weaverville	Trinity	40 45	123 25	2,162	16 7	Sept., 1869	Mar., 1886	Lieut. W. A. Glassford.
89	Fort Crook	Shasta	41 10	121 30	3,390	9 9	Jan., 1885	Apr., 1869	Lieut. W. A. Glassford, William H. Hall. Record broken. Aug., 1861; Oct., 1863; Jan., 1865; Dec., 1865, to Feb., 1866, inclusive; May to Aug., 1866, inclusive; Dec., 1867, to July, 1868, inclusive; Feb., 1869.
90	Delta	....do	41 00	122 22	1,138	4 11	Sept., 1882	Nov., 1887	William H. Hall. Central Pacific R. R. Sept., 1884; Sept., 1885; Oct., 1885, and Aug., 1887.
91	Anderson	....do	41 00	123 45	.....	0 11	Feb., 1886	Dec., 1886	Albert Fouch.
92	Reed's Camp	....do	40 34	122 18	.....	4 8	Jan., 1880	Aug., 1884	Lieut. W. A. Glassford. Signal Service. W. H. Hall.
93	Redding	....do	40 32	122 23	551	12 8	Sept., 1874	Nov., 1887	Central Pacific R. R. William H. Hall. Record broken. Dec., 1883; Mar. and Aug., 1884; June, July, and Sept., 1885; Feb., 1886.
94	Fort Reading	....do	40 30	122 05	600	3 11	Apr., 1852	Mar., 1856	Lieut. W. A. Glassford. May, 1852.
95	Red Bluff	Lassen.† Tehama	40 12	122 14	.....	16 3	Sept., 1871	Nov., 1887	Signal Service. Central Pacific R. R. William H. Hall.
96	Tehama	....do	40 00	122 08	220	16 11	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R. Record broken. Sept., 1884; Feb., Aug., Nov., 1886.
97	Corning	....do	39 55	122 10	.....	8 11	July, 1876	Dec., 1886	Lieut. W. A. Glassford. Missing dates not obtainable.
98	Indian Valley	Plumas	40 07	120 50	3,280	0 11	Jan., 1872	Feb., 1873	M. E. Ames. July and Sept., 1872, and Jan., 1873.
99	Meadow Valley	....do	39 53	121 05	4,000	4 4	Jan., 1861	Nov., 1867	Lieut. W. A. Glassford. Record broken. Jan., 1861, to Nov., 1867, inclusive; July, Sept., Oct., Dec., 1861; Jan. to Aug., 1862, inclusive; Nov., 1862; Jan., 1863; Mar. to Oct., 1863, inclusive; Sept., 1864; May, July, 1865; July to Sept., 1866, inclusive; June to Aug., 1867, inclusive.
100	Mumford Hill	....do	.....	.....	4,864	5 8	Jan., 1877	Aug., 1882	William H. Hall.
101	Camp Wright	Mendocino	39 55	122 48	1,800	10 9	July, 1864	Aug., 1875	Lieut. W. A. Glassford, William H. Hall. May to Aug., 1866, inclusive; Jan., 1867.
102	Laytonville	....do	39 42	123 30	.....	2 5	Nov., 1883	Mar., 1886	Lieut. W. A. Glassford.
103	Westport	....do	39 40	123 42	.....	2 5	Jan., 1885	May, 1887	Do.
104	Mendocino	....do	39 22	123 45	60	14 11	July, 1871	June, 1886	Lieut. W. A. Glassford, William H. Hall. Feb., 1875.
105	Cahto	....do	39 15	123 17	.....	1 0	Dec., 1869	Feb., 1871	Dr. Thornton. July, Aug., Oct., 1870.
106	Ukiah	....do	39 14	123 14	.....	9 6	Jan., 1877	June, 1886	Lieut. W. A. Glassford.

† No data.

CALIFORNIA—Continued

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
107	Point Arenas	Mendocino	38 54	123 36	6	11 4	Sept., 1875	Mar., 1887	Lieut. W. A. Glassford. Mar., July, Aug., 1885 or 1886.
108	Orland	Colusa	39 45	122 12	254	9 5	July, 1878	Nov., 1887	Central Pacific R. R. Lieut. W. A. Glassford, W. H. Hall.
109	Willows	....do	39 30	122 10	132	9 1	Sept., 1878	Nov., 1887	Central Pacific R. R. Lieut. W. A. Glassford, William H. Hall. June, 1885; Feb., 1887.
110	Princeton	....do	39 29	122 00	57	13 5	Oct., 1873	Mar., 1887	Lieut. W. A. Glassford, William H. Hall. July, 1886.
111	Little Stony	....do	39 25	122 30	.....	1 4	Jan., 1885	Apr., 1886	Lieut. W. A. Glassford.
112	Colusa	....do	39 20	122 03	45	14 6	Jan., 1872	June, 1886	Do.
113	Fouts Springs	....do	39 20	122 40	.....	1 11	July, 1885	May, 1887	Do.
114	Williams	....do	39 10	122 10	89	11 2	Sept., 1876	Nov., 1887	William H. Hall. Central Pacific R. R. June, 1885.
115	College City	....do	38 55	121 50	.....	2 8	July, 1883	Feb., 1886	Lieut. W. A. Glassford.
116	Cantelope Valley	... do	.....	.....	.....	8 5	Jan., 1878	May, 1886	Do.
117	Near Paradise City	Butte	39 45	121 35	125	0 3	Jan., 1869	Mar., 1869	J. W. A. Wright.
118	Chico	....do	39 44	121 50	196	17 1	Sept., 1870	Nov 1887	Central Pacific R. R. William H. Hall. Nov. and Dec., 1886.
119	Cherokee	....do	39 42	121 32	.....	12 4	Sept., 1871	Aug., 1884	William H. Hall. Record broken. Oct., Nov., 1871; Nov., Dec., 1876; July, Aug., 1877; June, July, 1878.
120	Oroville	....do	39 30	121 35	205	4 9	July, 1880	Mar., 1887	Lieut. W. A. Glassford. Record broken. Time of missing record uncertain, though probably from Jan., 1881, to Dec., 1884, inclusive.
121	Cherokee Reservoir.	....do	.....	.....	.....	6 0	Sept., 1873	Aug., 1879	William H. Hall.
122	Downieville	Sierra	39 33	120 49	2,200	0 7	Nov., 1859	Dec., 1860	Dr. T. R. Kibbe. Jan. to July, 1860, inclusive.
123	Smartville	Yuba	39 15	121 15	800	9 9	Sept., 1870	Aug., 1880	William H. Hall, Lieut. W. A. Glassford. Jan. to Mar., 1871, inclusive.
124	Marysville	....do	39 13	121 33	69	16 11	Sept., 1870	Oct., 1887	Central Pacific R. R William H. Hall. Jan., Dec., 1885, inclusive; May, 1886.
125	North Bloomfield	Nevada	39 28	120 52	3,160	16 0	July, 1870	June, 1886	Lieut. W. A. Glassford.
126	Bowman's Dam	....do	39 27	120 34	5,400	14 8	Sept., 1871	June, 1886	Lieut. W. A. Glassford. July, Aug., 1884.
127	Union Ranche	.. do	39 25	121 30	.....	1 0	June, 1859	Sept., 1860	J. Shaven. Oct., 1859; Jan. to Mar., 1860, inclusive.
128	Boca	... do	39 21	120 02	553	15 11	Sept., 1870	Nov., 1887	Central Pacific R. R. William H. Hall. Record broken, Sept., 1880, to Aug., 1881, inclusive; Oct., 1885; June, July, Sept., 1887.
129	Truckee	....do	39 20	120 04	5,819	17 1	Sept., 1870	Nov., 1887	Central Pacific R. R. William H. Hall. Sept., 1884; Aug., 1885.
130	Nevada City	....do	39 17	121 00	2,500	22 10	Sept., 1863	June, 1886	Lieut. W. A. Glassford.
131	Grass Valley	do	39 15	121 02	.....	13 10	Sept., 1872	June, 1886	Do.
132	Middletown	Lake	38 42	122 31	.....	6 8	Nov., 1879	May, 1886	Do.
133	Kono Tayee	....do	.....	.....	1,350	12 8	July, 1873	June, 1886	Lieut. W. A. Glassford. Apr. to June, 1878, inclusive; May, 1885 or 1886.
134	West Butte	Sutter	39 18	121 55	90	6 8	Nov., 1879	June, 1886	Lieut. W. A. Glassford.
135	Nicolaus	....do	38 52	121 31	.....	9 9	July, 1877	Mar., 1887	Do.
136	Summit	Placer	39 18	120 18	6,765	16 10	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R. Record broken, June, Aug., Nov., 1885; Nov., 1886; Sept., 1887.
137	Emigrant Gap	....do	39 17	120 38	5,230	17 3	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R.
138	Cisco	....do	39 17	120 30	5,939	17 1	Sept., 1870	Nov., 1887	Central Pacific R. R. William H. Hall. Feb., 1885; Nov., 1886.
139	Alta	....do	39 12	120 48	3,612	14 11	Sept., 1870	Aug., 1885	Central Pacific R. R. William H. Hall. Mar., 1884. Incomplete.
140	Colfax	....do	39 08	120 57	2,421	17 3	Sept., 1870	Nov., 1887	Central Pacific R. R. William H. Hall.
141	Lower Soda Springs.	....do	39 00	120 50	.....	0 1	Jan., 1883	.....	Central Pacific R R.
142	Auburn	....do	38 54	121 01	1,563	17 2	Sept., 1870	Nov., 1887	Cental Pacific R. R. William H. Hall.
143	Rocklin	....do	38 45	121 20	249	16 10	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R. Record broken. July, Aug., 1881; Sept., Nov., 1884; Nov., 1885.
144	Dunnigan	Yolo	38 56	122 00	68	11 3	Sept., 1876	Nov., 1887	Central Pacific R. R. William H. Hall.
145	Knight's Landing	....do	38 48	121 42	45	10 3	Sept., 1877	Nov., 1887	Do.
146	Woodland	...do	38 40	121 45	61	15 0	Sept., 1872	Nov., 1887	Central Pacific R. R. William H. Hall, Lieut. W. A. Glassford. June, Oct., 1884; Nov., 1885.
147	Davisville	...do	38 33	121 45	52	16 3	Sept., 1871	Nov., 1887	Central Pacific R. R. William H. Hall.
148	Georgetown	El Dorado	38 55	120 51	2,433	14 0	July, 1872	June, 1886	Lieut. W. A. Glassford.
149	Placerville	....do	38 44	120 48	2,109	10 4	Jan., 1874	May, 1886	Lieut. W. A. Glassford. Sept., 1877, to Sept., 1879, inclusive.
150	Shingle Springs	....do	38 39	120 55	1,393	19 4	July, 1849	Oct., 1886	Lieut. W. A. Glassford. Apr., 1868, to Nov., 1885, inclusive; June to Sept., 1886, inclusive.

CALIFORNIA—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length	Record. From—	Record. To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
151	Healdsburgh	Sonoma	38 37	122 57	.....	2 7	Sept., 1871	Nov., 1878	William H. Hall. Central Pacific R. R. July, 1873, to Feb., 1878, inclusive.
152	Santa Rosa	....do	38 26	122 42	160	0 6	Nov., 1873	Apr., 1874	Prof. W. B. Hardy.
153	Sonoma	....do	38 21	122 30	.....	1 6	Nov., 1885	Apr., 1887	Lieut. W. A. Glassford.
154	Templeville	.. do	38 20	122 28	.....	0 11	Jan., 1887	Nov., 1887	Central Pacific R. R.
155	Stony Point	....do	38 20	122 34	500	0 1	Sept., 1869	.....	Dr. Thornton.
156	Petaluma	....do	38 15	122 39	10	16 3	Sept., 1871	Nov., 1887	Lieut. W. A. Glassford.
157	Calistoga	Napa	38 39	122 35	402	15 3	Sept., 1872	Nov., 1887	Central Pacific R. R. William H. Hall.
158	Napa City	....do	38 18	122 18	95	11 1	Sept., 1876	Nov., 1887	Central Pacific R. R. William H. Hall. Sept., 1884; July, 1886.
159	Knoxville	....do	.....	.....	.....	1 0	Sept., 1883	Aug., 1884	Central Pacific R. R.
160	Folsom	Sacramento	38 40	121 09	197	14 10	Sept., 1871	June, 1886	Lieut. W. A. Glassford.
161	Sacramento	....do	38 34	121 26	82	38 4	Sept., 1849	Dec., 1887	Signal Service. Lieut. W. A. Glassford.
162	Camp Far West	....do	38 33	121 20	50	2 3	June, 1850	Mar., 1852	Dr. R. V. Abbott, U. S. Army.
163	Brighton	....do	38 31	121 27	53	10 3	Sept., 1877	Nov., 1887	Central Pacific R. R. William H. Hall.
164	Galt	....do	38 15	121 15	49	10 2	Sept., 1877	Nov., 1887	Central Pacific R. R. William H. Hall. Oct., 1887.
165	Ione	Amador	38 20	120 56	287	10 5	July, 1877	Nov., 1887	Central Pacific R. R. Lieut. W. A. Glassford.
166	Sutter Creek	....do	38 20	120 50	.....	12 7	Oct., 1874	Apr. 1887	Lieut. W. A. Glassford.
167	Jackson	....do	38 20	120 43	934	9 0	July, 1877	June, 1886	Do.
168	Winters	Alpine.† Solano	38 31	121 59	.....	1 0	July, 1885	June, 1886	Do.
169	Elmira	... do	38 27	121 57	.....	1 11	Jan., 1886	Nov., 1887	Central Pacific R. R.
170	Vacaville	....do	38 21	121 56	304	8 1	Feb., 1869	Apr., 1887	Lieut. W. A. Glassford. Prof. J. C. Simmons. Record broken. June, Aug., Sept., 1869; May, 1870, to Nov., 1879, inclusive; June to Sept., 1886, inclusive.
171	Denverton	....do	38 14	121 54	10	13 6	July, 1873	Dec., 1886	Lieut. W. A. Glassford.
172	Suisun and Fairfield.	....do	38 13	122 00	.....	16 2	Sept., 1871	Nov., 1887	Central Pacific R. R. William H. Hall. June, 1885.
173	Rio Vista	....do	38 08	121 30	.....	7 7	Dec., 1878	Jan., 1886	Lieut. W. A. Glassford.
174	South Vallejo	....do	38 06	122 14	23	15 2	Sept., 1872	Nov., 1887	Central Pacific R. R. William H. Hall. Sept., 1884.
175	Bird's Landing	....do	38 05	121 42	.....	3 0	July, 1883	June, 1886	Lieut. W. A. Glassford.
176	Benicia Barracks	....do	38 02	122 06	64	32 0	Nov., 1849	Nov., 1887	Lieut. W. A. Glassford. Record broken. Sept., 1865, to Aug., 1870, inclusive; Dec., 1849; Apr., May, 1850; Dec., 1860; Dec., 1861; Apr., 1862; Jan., Oct., 1863; Mar., 1865; Dec., 1872, to Mar., 1873, inclusive.
177	Point Reyes	Calaveras.† Marin	38 00	123 00	296	10 11	July, 1875	May, 1886	Lieut. W. A. Glassford.
178	San Rafael	....do	37 59	122 51	25	12 0	July, 1874	June, 1886	Do.
179	Ross Valley	....do	37 55	122 40	....	2 8	July, 1883	Feb., 1886	Do.
180	Saucelito	....do	37 50	122 30	.....	5 0	July, 1881	June, 1886	Do.
181	Angel Island	....do	37 48	122 28	50	18 9	Jan., 1868	Nov., 1887	U. S. post hospital. Lieut. W. A. Glassford. May, 1871, to June, 1872, inclusive.
182	Point Bonita	....do	37 48	122 33	124	10 11	July, 1875	May, 1886	Lieut. W. A. Glassford.
183	Mare Island	San Francisco	38 06	122 15	29	2 6	Jan., 1868	Dec., 1873	U. S. post hospital. Record broken. May., Aug., Sept., Oct., Dec., 1868; Apr. to Sept., 1869, inclusive; Jan., 1870, to Sept., 1871, inclusive; May to Sept., 1872, inclusive; May to Sept., 1873, inclusive.
184	Alcatraz Island	.. do	37 49	122 27	45	23 3	July, 1861	Nov., 1887	Lieut. W. A. Glassford. Record broken. Sept. to Dec., 1861, inclusive; Mar., Aug., Sept., Nov., 1862; Jan., May, Oct., 1863; May, 1864, to Nov., 1865, inclusive; May to Aug., 1866, inclusive; Oct., 1867; Feb., 1873; Apr., May, 1874.
185	Fort Point	....do	37 48	122 26	100	14 11	Jan., 1860	Dec., 1874	Lieut. W. A. Glassford. Sept., 1874.
186	San Francisco	....do	37 48	122 26	.....	38 6	July, 1849	Dec., 1887	Signal Service. Thomas Tennant.
187	Yerba Buena Island.	....do	37 48	122 20	97	13 5	Feb., 1869	May, 1886	Lieut. W. A. Glassford. Record broken. Mar., June, 1869; Feb. to Aug., 1871, inclusive; Nov., 1871, to June, 1872, inclusive; Oct., 1872, to Apr., 1873, inclusive; Oct., 1873, to Aug., 1875, inclusive.
188	Presidio	....do	37 47	122 26	150	34 6	Mar., 1850	Nov., 1887	Lieut. W. A. Glassford. William H Hall. Record broken. Apr., 1850; July, 1850, to June, 1852, inclusive; Sept., 1861, to Oct., 1862, inclusive.
189	Farallon Islands	....do	37 44	123 00	331	6 0	July, 1880	June, 1886	Lieut. W. A. Glassford.
190	Point San José	....do	37 42	122 25	80	8 11	Oct., 1866	May, 1880	U. S. post hospital. Record broken. Nov., 1866, to Dec., 1868, inclusive; Feb., 1869, to July, 1870, inclusive; Apr., 1877, to Apr., 1878, inclusive.

† No data.

CALIFORNIA—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	From—	To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
191	Antioch	Contra Costa	38 01	121 48	25	9 2	Sept., 1878	Nov., 1887	Central Pacific R. R. William H. Hall. Dec., 1885.
192	Martinez	do	38 00	121 53	9	10 3	Sept., 1877	Nov., 1887	Central Pacific R. R. William H. Hall.
193	East Brother Island.	do	37 56	122 24	63	10 6	Dec., 1875	May, 1886	Lieut. W. A. Glassford.
194	Brentwood	do	37 56	121 37	80	8 0	Sept., 1879	Nov., 1887	Central Pacific R. R. William H. Hall. July, Dec., 1885; Dec., 1886.
195	Clayton	do	37 56	121 55	76	0 4	Jan., 1870	Apr., 1870	C. L. McClung.
196	Mount Diablo	do	37 54	121 42	.....	2 6	July, 1874	June, 1877	Lieut. W. A. Glassford. Record broken. Sept. to Feb., inclusive, missing for one year.
197	Byron	do	37 54	121 33	33	7 11	Sept., 1879	Nov., 1887	Central Pacific R. R. William H. Hall. June, Dec., 1885; Sept., Oct., 1887.
198	Camp Union	San Joaquin	38 34	121 26	54	1 1	Jan., 1865	July, 1867	U. S. post hospital. Record broken. Probably from Sept., 1865, to Mar., 1867, except one month.
199	Farmington	do	37 57	121 00	111	10 3	Sept., 1876	Nov., 1887	Central Pacific R. R. William H. Hall. Sept., 1877, to Aug., 1878, inclusive.
200	Stockton	do	37 51	121 15	.....	24 1	Jan., 1853	Nov., 1887	Central Pacific R. R. William H. Hall. Feb., 1857, to Aug., 1867, inclusive; Sept., 1884; July, 1885; Nov., 1885.
201	Lathrop	do	37 50	121 16	25	10 3	Sept., 1877	Nov., 1887	Central Pacific R. R. William H. Hall.
202	Ellis and Tracy	Tuolumne	.....	.....	.....	17 1	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R. Nov., 1886; Sept., 1887.
203	Berkeley	Mono.† Alameda	37 52	122 16	.....	0 6	Dec., 1886	May, 1887	Lieut. W. A. Glassford.
204	Oakland	do	37 48	122 18	25	14 8	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R.
205	Livermore	do	37 42	121 46	485	17 3	Sept., 1870	Nov., 1887	Do.
206	Pleasanton	do	37 42	121 47	360	9 10	Sept., 1877	Oct., 1887	William H. Hall. Central Pacific R. R. Aug., Oct., 1885; Nov., Dec., 1886.
207	Niles	do	37 37	121 57	87	17 1	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R. Nov., 1886; Apr., 1887.
208	Midway	do	37 33	121 30	.....	2 0	Sept., 1877	Aug., 1879	William H. Hall.
209	Calaveras Valley	do	37 30	121 54	626	4 0	Sept., 1878	Aug., 1884	William H. Hall. Sept., 1880, to Aug., 1882, inclusive.
210	Marsh Ranch	Stanislaus	37 53	121 42	.....	0 6	Nov., 1867	May, 1868	F. M. Rogers. Feb., 1868.
211	Langworth	do	37 45	120 54	153	4 0	July, 1881	June, 1886	Lieut. W. A. Glassford. July, 1882, to June, 1883, inclusive.
212	La Grange	do	37 42	120 28	250	19 0	July, 1867	June, 1886	Lieut. W. A. Glassford.
213	Modesto	do	37 40	121 00	90	17 2	Sept., 1870	Nov., 1887	William H. Hall. Central Pacific R. R. Nov., 1885.
214	Grayson	do	37 35	121 12	55	14 0	Sept., 1870	Aug., 1884	William H. Hall.
215	Turlock	do	37 32	120 51	106	9 3	Sept., 1878	Nov., 1887	William H. Hall. Central Pacific R. R.
216	Hill's Ferry	do	37 24	121 00	72	6 0	July, 1880	June, 1886	Lieut. W. A. Glassford.
217	San Mateo	Mariposa.† San Mateo	37 35	122 16	30	14 3	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R.
218	Crystal Springs	do	37 35	122 16	220	9 0	Sept., 1875	Aug., 1884	William H. Hall.
219	Menlo Park	do	37 30	122 11	72	9 9	Mar., 1878	Nov., 1887	William H. Hall. Central Pacific R. R.
220	Woodside	do	37 25	122 14	.....	2 6	Jan., 1884	June, 1886	Lieut. W. A. Glassford.
221	Pigeon Point	do	37 12	122 21	150	10 10	July, 1875	May, 1886	William H. Hall. Lieut. W. A. Glassford. Dec., 1878.
222	Año Nuevo Island	do	37 09	122 18	.....	10 10	Sept., 1875	June, 1886	Lieut. W. A. Glassford.
223	San Andres	do	37 05	121 25	.....	16 0	Sept., 1868	Aug., 1884	William H. Hall.
224	Pilarcitos	do	.....	.....	.....	20 0	Sept., 1864	Aug., 1884	Do.
225	Point Montara	do	.....	.....	.....	10 9	Sept., 1875	Nov., 1886	William H. Hall. Lieut. W. A. Glassford.
226	Mount Hamilton	Santa Clara	39 13	120 36	4,250	3 8	Jan., 1881	Aug., 1884	William H. Hall.
227	Murphy's	do	38 08	120 28	2,200	0 10	Mar., 1868	Mar., 1869	E. Cutting. July, Aug., Nov., 1868.
228	Wright's	do	37 39	121 18	.....	1 5	Nov., 1885	Mar., 1887	Lieut. W. A. Glassford.
229	San José	do	37 22	121 50	94	14 2	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R. Oct., 1884.
230	Santa Clara	do	37 20	121 58	80	6 0	Sept., 1878	Nov., 1885	Lieut. W. A. Glassford. Parts of months missing.
231	Los Gatos	do	37 14	122 02	600	2 4	Feb., 1884	May, 1887	Lieut. W. A. Glassford. One year from Feb. to May, inclusive, missing.
232	Tennant	do	37 06	121 34	335	8 1	Sept., 1877	Oct., 1885	William H. Hall. Central Pacific R. R. May, 1885.
233	Gilroy	do	37 00	121 03	261	14 1	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R. Sept., 1885; Nov., 1886.
234	Livingston	Merced	37 24	120 47	.....	1 4	Jan., 1886	Apr., 1887	Lieut. W. A. Glassford.
235	Central Point	do	37 18	121 00	117	7 0	July, 1879	June, 1886	Do.
236	Merced	do	37 17	120 30	17	16 1	Sept., 1871	Oct., 1887	William H. Hall. Central Pacific R. R. Feb., 1886.
237	Athlone	do	37 15	120 25	.....	2 0	Dec., 1885	Nov., 1887	Central Pacific R. R.
238	Los Banos	do	37 04	120 46	.....	11 6	Jan., 1875	Aug., 1886	Lieut. W. A. Glassford. Apr., June, missing for one year.
239	Aptos	Santa Cruz	36 59	121 57	.....	3 4	July, 1884	Nov., 1887	Central Pacific R. R. Sept., 1884.

† No data.

CALIFORNIA—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	Record. From—	Record. To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
240	Santa Cruz	Santa Cruz	36 58	122 25	.....	11 11	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R. Record broken. Jan., July, Aug., Sept., Oct., Dec., 1874; May, June, July, Sept., Dec., 1875; Mar., Apr., June, July, Aug., 1876; Sept., 1876, to Aug., 1877, inclusive.
241	Loma Prieta	....do	36 58	121 55	.....	0 5	Jan., 1884	May, 1884	Central Pacific R. R.
242	Watsonville	....do	36 56	121 43	45	2 1	Jan., 1869	Feb., 1872	Dr. A. J. Compton. Record broken. June to Aug., 1869, inclusive; June, Aug., Sept., Dec., 1870; Apr., June, July, Aug., Oct., Nov., 1871.
243	Soquel	....do	36 59	121 58	.....	1 2	Jan., 1885	July, 1886	Central Pacific R. R.
244	Buchanan	Fresno	37 12	120 00	.....	4 0	Sept., 1878	Aug., 1882	William H. Hall.
245	Fort Miller	... do	37 00	119 40	402	6 9	July, 1851	June, 1858	U. S. post hospital. Nov., 1851; July, Aug., 1854.
246	Hamptonville	....do	36 58	119 45	331	1 8	Jan., 1879	Aug., 1880	William H. Hall.
247	Borden	....do	36 57	120 03	274	12 3	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R.
248	Big Dry Creek	....do	36 53	119 33	.....	7 4	Sept., 1871	Dec., 1878	William H. Hall.
249	Firebaugh Ferry	....do	36 50	120 30	150	13 7	Dec., 1872	June, 1886	Lieut. W. A. Glassford.
250	Fresno	... do	36 44	119 51	295	10 1	Sept., 1877	Oct., 1887	William H. Hall. Central Pacific R. R. Sept., 1885.
251	King's River (Centerville).	....do	36 44	120 22	.....	5 9	Dec., 1878	Aug., 1884	William H. Hall.
252	Kingsburgh	... do	36 30	119 33	301	9 3	Sept., 1878	Nov., 1887	William H. Hall. Central Pacific R. R.
253	New Idria	...do	36 27	120 22	.....	4 5	July, 1881	June, 1886	Lieut. W. A. Glassford. Jan. to July, 1883, inclusive.
254	Selma	....do	.....	.....	.....	1 8	Jan., 1886	Oct., 1887	Central Pacific R. R. Nov., 1886; Sept., 1887.
255	Hollister	San Benito	36 51	121 25	292	14 3	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R.
256	San Benito	... do	36 08	121 02	140	1 3	Nov., 1861	May, 1863	Dr. C. A. Canfield. July, Aug., Sept., Dec., 1862.
257	Pajaro	Monterey	36 54	121 44	31	14 3	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R.
258	Salinas	....do	36 38	121 39	75	15 3	Sept., 1872	Nov., 1887	Do.
259	Monterey	....do	36 36	121 52	42	11 9	May, 1847	Nov., 1887	William H. Hall. Central Pacific R. R. Record broken. Sept., 1848, to Apr., 1849, inclusive; Jan. to June, 1851, inclusive; Sept., 1852, to Feb., 1880, inclusive; Apr., 1886; July, 1887.
260	Chualar	....do	36 35	121 26	111	11 1	Nov., 1876	May, 1887	Lieut. W. A. Glassford, William H. Hall. Central Pacific R. R. Record broken. Apr., June, Nov., Dec., for one year; May for two years.
261	Soledad	....do	36 27	121 18	188	14 2	Sept., 1873	Nov., 1887	William H. Hall. Central Pacific R. R.
262	Jolon	....do	36 00	121 15	.....	4 9	Sept., 1882	May, 1887	Lieut. W. A. Glassford.
263	Gonzales	...do	35 57	121 14	.....	9 4	Jan., 1877	Apr., 1886	Do.
264	Kings City	...do	.....	....	....	1 2	Oct., 1886	Nov., 1887	Central Pacific R. R.
265	San Ardo	....do	.....	.....	.....	0 11	Jan., 1887	Nov., 1887	Do.
266	Kingsburgh	Tulare	36 30	119 23	.....	2 10	Nov., 1881	Aug., 1884	William H. Hall.
267	Visalia	....do	36 20	119 17	335	8 1	Jan., 1870	May, 1886	Lieut. W. A. Glassford. Record broken. June to Sept., 1870, inclusive; Mar. to June, 1871, inclusive; Aug., 1871, to June, 1877, inclusive; nine months missing between May, 1883, and May, 1886.
268	Fort Babbitt	...do	36 20	119 23	.....	0 9	Dec., 1864	Feb., 1866	U. S. post hospital. Mar., 1865; June to Sept., 1865, inclusive; Dec., 1865.
269	Goshen	....do	36 19	119 21	286	9 6	Dec., 1875	Nov., 1887	William H. Hall. Central Pacific R. R. Sept., 1876, to Jan., 1879, inclusive; June, 1884.
270	Hanford	....do	36 18	119 33	.....	7 5	Feb., 1879	June, 1886	Lieut. W. A. Glassford.
271	Lemoore	...do	36 15	119 44	.....	9 1	Sept., 1878	Nov., 1887	William H. Hall. Central Pacific R. R. Sept., 1884; July, 1886.
272	Tulare	.. do	36 13	119 19	289	13 2	Sept., 1874	Nov., 1887	William H Hall. Central Pacific R. R. Nov., 1886.
273	Lewis Valley	....do	.....	.....	.....	7 10	Feb., 1879	Nov., 1886	Lieut. W. A. Glassford.
274	Traver	....do	.....	.....	.....	1 6	Jan., 1886	Sept., 1887	Central Pacific R. R. Nov., Dec., 1886; May, 1887.
275	Bishop Creek	Inyo	37 24	118 09	.....	3 7	Dec., 1883	Nov., 1887	Central Pacific R. R., Lieut. W. A. Glassford. Record broken. Jan., Feb., 1884; Nov., 1885; Mar., Nov., 1886.
276	Camp Independence.	....do	36 55	118 10	3,958	10 11	Nov., 1865	Aug., 1877	William H. Hall. Record broken. May to Aug., 1866, inclusive; Oct., Dec., 1866; Sept., Oct., Nov., 1867; Apr., May, 1870.
277	Keeler	....do	36 32	117 54	3,622	3 7	Apr., 1884	Dec., 1887	Lieut. W. A. Glassford. Signal Service. Jan., Feb., 1885.
278	San Miguel	San Luis Obispo	35 44	120 40	.....	1 0	Dec., 1886	Nov., 1887	Central Pacific R. R.
279	Paso Robles	....do	35 30	120 42	.....	1 1	Nov., 1886	Nov., 1887	Do.
280	San Luis Obispo	....do	35 18	120 39	270	16 11	July, 1869	May, 1886	Lieut. W. A. Glassford.

CALIFORNIA—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
281	Fort Harford	San Louis Obispo	.....	.....	.....	1 4	Dec., 1884	Apr., 1886	Lieut. W. A. Glassford. Feb., 1880 or 1886.
282	Delano	Kern	35 57	119 14	319	12 1	Sept., 1875	Nov., 1887	William H. Hall. Central Pacific R. R. Nov., 1885; Oct., 1887.
283	Sumner	....do	35 24	118 58	422	13 8	Sept., 1874	Nov., 1887	William H. Hall. Central Pacific R. R.
284	Caliente	....do	35 18	118 37	1,293	11 2	Sept., 1876	Nov., 1887	William H. Hall. Central Pacific R. R. Dec., 1886.
285	Tehachapi	....do	35 09	118 24	3,964	10 10	Nov., 1876	Oct., 1887	William H. Hall. Central Pacific R. R. Feb., 1885; Oct., 1886.
286	Keene	....do	35 05	118 38	2,705	10 3	Sept., 1877	Nov., 1887	William H. Hall. Central Pacific R. R.
287	Mojave	....do	34 55	118 18	2,751	10 10	Sept., 1876	Nov., 1887	William H. Hall. Central Pacific R. R. Record broken. Feb. 1883; Sept., Nov., Dec., 1884; Apr., Nov., 1886.
288	Fort Tejon	....do	34 25	118 55	3,246	6 0	Mar., 1855	Aug., 1864	William H. Hall. Record broken. July, 1855; Feb., Apr., 1859; Nov., 1859; June to Dec., 1860, inclusive; June, 1861, to Oct., 1863, inclusive; Dec., 1863; Mar., 1864.
289	McClung Ranch	....do	.....	.....	.....	3 0	Sept., 1879	Aug., 1882	William H. Hall.
290	Camp Cady	San Bernardino	34 55	116 41	3,000	2 2	May, 1868	June, 1876	Do.
291	Daggett	....do	34 52	116 54	.....	1 0	Sept., 1883	Aug., 1884	Do.
292	Fenner	.. do	34 48	115 12	.....	1 1	Sept., 1883	Sept., 1884	William H. Hall. Central Pacific R. R.
293	Needles	....do	34 41	114 28	.....	1 1	Sept., 1883	Sept., 1884	Do.
294	San Bernardino	....do	34 06	117 18	1,118	16 0	July, 1870	June, 1886	Lieut. W. A. Glassford.
295	Lugonia	....do	34 05	117 12	.....	3 4	Nov., 1883	Feb., 1887	Do.
296	Ontario	....do	34 04	116 40	.....	2 3	Dec., 1883	May, 1887	Lieut. W. A. Glassford. Missing at intervals.
297	Colton	... do	34 03	117 18	965	11 0	Sept., 1876	Oct., 1887	William H. Hall. Central Pacific R. R. July, Aug., 1881.
298	Rancho de Jurupa	....do	34 00	117 25	1,000	1 11	July, 1851	Mar., 1854	U. S. post hospital. Nov., 1851, to Aug., 1852, inclusive.
299	Riverside	....do	33 56	117 21	1,030	5 8	Sept., 1880	Apr., 1886	Lieut. W. A. Glassford.
300	San Gorgonia	....do	33 55	116 59	.....	5 2	Oct., 1874	Nov., 1887	John J. Ring. Record broken. Nov., 1874; Apr., Sept., and Nov., 1875; July, 1878, to Dec., 1885, inclusive; Mar., Dec., 1886.
301	Rings Station	....do	....	.....	.....	7 10	Nov., 1874	Aug., 1882	William H. Hall.
302	Arroyo Grande	Santa Barbara	35 05	120 31	.....	1 6	Dec., 1884	June, 1886	Lieut. W. A. Glassford. Feb., 1885.
303	Santa Maria	....do	34 58	120 29	.....	1 11	Dec., 1884	Apr., 1887	Lieut. W. A. Glassford. Broken. February, missing for one year; May to Sept., inclusive, missing for one year.
304	Guadaloupe	....do	34 44	120 39	33	1 7	Oct., 1885	Apr., 1887	Lieut. W. A. Glassford.
305	Los Alamos	....do	34 40	120 20	.....	1 4	Dec., 1884	Apr., 1886	Lieut. W. A. Glassford. Mar., 1885.
306	Point Conception	....do	34 26	120 24	258	10 0	July, 1876	June, 1886	Lieut. W. A. Glassford.
307	Santa Barbara	....do	34 25	119 42	20	20 5	July, 1867	Nov., 1887	Lieut. W. A. Glassford, G. P. Tebbetta, and Elwood Cooper.
308	Nordhoff	Ventura	34 27	119 08	1,200	5 5	Dec., 1881	May, 1887	Lieut. W. A. Glassford. May, missing for one year.
309	San Buenaventura	do	34 17	119 31	50	11 0	July, 1875	June, 1886	Lieut. W. A. Glassford.
310	Los Angeles	Los Angeles	34 52	118 18	371	16 4	Sept., 1871	Dec., 1887	Signal Service. William H. Hall.
311	Ravenna	....do	34 30	118 12	2,358	8 1	Sept., 1879	Nov., 1887	William H. Hall. Central Pacific R. R. May and June, 1887.
312	Newhall	....do	34 24	118 34	1,268	11 3	Sept., 1876	Nov., 1887	William H. Hall. Central Pacific R. R.
313	San Fernando	....do	34 17	118 27	1,066	9 6	Sept., 1877	Aug., 1887	William H. Hall. Central Pacific R. R. Broken. June, Nov., 1884; Feb., Mar., and Dec., 1886; May, 1887.
314	Cahuenga Valley	... do	34 09	118 29	800	4 2	Jan., 1883	Mar., 1887	Lieut. W. A. Glassford. Dec., 1886.
315	El Monte	....do	34 04	118 05	.....	2 3	Dec., 1872	Oct. 1876	George H. Puh. Record broken. Mar. to July, 1873, inclusive; Sept., 1873; June to Sept., 1874, inclusive; Nov., 1874; Mar. to June, 1875, inclusive; May to Sept., 1876, inclusive.
316	Spadra	... do	34 03	117 46	705	13 0	Sept., 1874	Nov., 1887	William H. Hall. Central Pacific R. R. Feb., 1885; May and Sept., 1887.
317	Santa Monica	...do	34 01	118 30	50	3 8	Sept., 1879	Nov., 1877	William H. Hall. Central Pacific R. R. Sept., 1880, to Feb., 1885, inclusive; Dec., 1885.
318	Downey	....do	33 55	118 07	112	1 6	Dec., 1885	May, 1887	Lieut. W. A. Glassford.
319	Drum Barracks	....do	33 49	118 22	32	5 2	May, 1864	Apr., 1870	William H. Hall. Apr. to Aug., 1866, inclusive; Apr., Oct., and Nov., 1867; Nov., 1868; Oct., 1869.
320	Orange	....do	33 48	117 55	.....	1 4	Dec., 1884	May, 1886	Lieut. W. A. Glassford. Jan. and Feb., 1885.

CALIFORNIA—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
321	Anaheim Barracks	Los Angeles	33 48	117 54	250	10 3	Sept., 1877	Nov., 1887	William H. Hall. Central Pacific R. R.
322	Alosta	do				5 9	Oct., 1880	June, 1886	Lieut. W. A. Glassford.
323	Whitewater	San Diego	33 57	116 30		7 0	Sept., 1877	Aug., 1884	William H. Hall.
324	Cabazon	do	33 56	116 48		1 2	Aug., 1884	Sept., 1885	Central Pacific R. R.
325	Indio	do	33 42	116 10	12	9 11	Sept., 1877	Sept., 1887	William H. Hall. Central Pacific R. R. Jan., Feb., 1886.
326	Fall Brook	do	33 24	117 20	700	10 4	Jan., 1876	Feb., 1887	Lieut. W. A. Glassford. Oct., 1880, to Jan., 1881, inclusive; Aug. to Nov., 1886, inclusive; Jan., 1887, and June, for one year.
327	San Luis Rey	do	33 31	117 20	20	3 5	July, 1850	June, 1878	G. T. Merriam. U. S. post hospital. Apr. to July, 1851, inclusive; Sept., 1851, to Nov., 1875, inclusive.
328	Escondido	do	33 18	117 08		10 6	July, 1876	June, 1886	Lieut. W. A. Glassford.
329	Julian	do	33 08	116 37		5 4	Nov., 1875	Aug., 1884	Do.
330	Mammoth	do	33 06	115 16		10 2	Sept., 1877	Nov., 1887	William H. Hall. Central Pacific R. R. July, 1887.
331	Poway	do	32 59	117 03		8 10	Oct., 1878	Oct., 1887	Lieut. W. A. Glassford. Dec., 1886; Jan. and Feb., 1887.
332	Viejas	do	32 48	116 41		0 9	Dec., 1875	Oct., 1876	W. S. Emery. May and Aug., 1876.
333	Fort Yuma	do	32 46	114 40	200	31 5	Jan., 1851	Dec., 1887	William H. Hall. Central Pacific R. R. Record broken. May, 1851, to May, 1852, inclusive; Sept., 1855; July, 1857; Sept., Oct., and Nov., 1861; Oct., 1862, to Feb., 1866, inclusive; May to Aug., 1866, inclusive; Oct., 1866; Mar. and May, 1868; Dec., 1883.
334	San Diego	do	32 43	117 10	67	25 10	Jan., 1850	Nov., 1887	Lieut. W. A. Glassford. Signal Service. Record broken. Jan. to May, 1859, inclusive; Jan., 1860, to Aug., 1871, inclusive.
335	Campo	do	32 36	116 44		5 5	Mar., 1877	Sept., 1882	Signal Service. Nov., 1877; July, 1882.
336	Otay Mesa	do				2 3	Nov., 1884	Feb., 1887	Lieut. W. A. Glassford. Jan., missing for one year.
337	Oakwood	do				1 4	Jan., 1876	June, 1877	F. E. Fox. Apr. and May, 1876.
338	Paradise Valley	do				0 6	Jan., 1873	Dec., 1873	J. M. Asher. Mar., May, June, July, Sept., and Oct., 1873.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
70, Camp Lincoln	16.87	26.23	1867	7.34	1868	6.68	11.29	1867	3.95	1869	11.20	16.72	1868	4.59	1867
71, Crescent City	13.69	18.28	.....	10.77	1883	10.44	23.32	1882	3.52	1883	6.29	9.61	1884	0 84	.....
72, Fort Ter Waw	9.97	12.26	1861	7.68	1860	8.78	10.39	1861	7.17	1860	4.51	8.53	1860	0.48	1861
73, Yreka	3.19	11.78	1881	1.13	1885	1.75	3.91	1878	0.19	1875	1.55	3.96	1879	0.19	1881
74, Scott Valley	4.84	13.95	1881	1.12	1861	2.93	6.94	1872	0.17	1875	2.52	9.20	1866	0.64	1867
75, Fort Jones	2.88	6.15	1858	0.54	1854	4.10	8.78	1858	0.42	1856	2.77	5.24	1855	0.75	1854
76, Berryvale	3.67	6.35	1882	0.99	1883	2.00	2.90	1882	1.10	1883	5.94	10.15	1883	1.74	1882
77, Almaden	1.52	.....	.....	.....	.....	8.60	.....	.....	.....	.....	0.92	.....	.....	.....	.....
78, Fort Bidwell	4.24	12.71	1870	0.75	1878	2.71	6.00	1881	0.07	1875	2.25	6.70	1867	0.04	1885
79, Little Hot Springs	5.53	.....	.....	.....	.....	2.81	.....	.....	.....	.....	3.00	.....	.....	.....	.....
80, Fort Gaston	10.56	26.50	1866	4.80	1865	7.99	18.00	1866	0.59	1875	7.50	34.52	1866	0.38	1885
81, Blue Lake	12.66	.....	.....	.....	.....	7.34	.....	.....	.....	.....	3.98	.....	.....	.....	.....
82, Arcata	5.85	.....	.....	.....	.....	6.07	.....	.....	.....	.....	3.08	.....	.....	.....	.....
83, Fort Humboldt	5.78	10.62	1866	1.82	1865	5.96	10.10	1859	1.97	1856	5.30	10.94	1866	1.21	1856
84, Humboldt Light-House	6.28	10.92	'78 '81	2.95	1884	4.64	9.09	1882	0.27	1877	4.46	8.83	1879	0.15	....
85, Hydesville	5.91	8.73	.....	4.43	.....	3.76	4.30	.....	3.43	.....	3.47	7.03	.....	0.24	.....
86, Cape Mendocino	2.68	4.61	1886	1.27	1884	1.89	2.86	1883	1.37	'85 '86	1.90	3.52	1884	0.34	1885
87, Orleans	8.66	11.61	.....	5.71	.....	3.78	5.16	.....	2.41	.....	2.10	3.45	.....	0.85	....
88, Weaverville	8.21	19.83	1878	2.02	1879	5.75	16.20	1878	0.46	1875	4.72	12.84	1879	0.15	....
89, Fort Crook	3.16	8.22	1862	1.10	1864	3.33	4.89	1862	0.00	1864	3.52	8.25	1866	0.58	1864
90, Delta	6.65	15.57	1884	1.00	1883	3.56	10.27	1887	0.00	1883	7.03	14.46	1883	0.37	1884
91, Anderson	.....	.....	.....	.....	.....	0.38	.....	.....	.....	.....	1.08	.....	.....	.....	.....
92, Reed's Camp	12.40	31.76	1881	1.00	1883	7.48	15.37	1882	0.00	1883	11.45	14.46	1883	8.04	1881
93, Redding	7.07	22.69	1878	1.78	1883	4.98	13.78	1878	0.16	1875	3.91	10.54	1879	0.00	1885
94, Fort Reading	4.88	8.25	1856	2.90	1854	3.27	6.95	1855	0.80	1856	3.91	7.11	1853	0.80	1854
95, Red Bluff	5.97	20.71	1878	0.62	1887	3.87	16.66	1878	0.00	1886	2.54	7.99	1884	0.00	1885
96, Tehama	2.70	11.35	1878	0.00	1872	2.37	7.00	1878	0.00	1875	1.64	4.94	1884	0.05	1885
97, Corning	3.16	.....	.....	.....	.....	2.90	.....	.....	.....	.....	2.09	.....	.....	.....	.....
98, Indian Valley	7.75	.....	.....	.....	.....	8.33	.....	.....	.....	.....	3.30	.....	.....	.....	.....
99, Meadow Valley	7.41	.....	.....	.....	.....	6.05	.....	.....	.....	.....	6.21	.....	.....	.....	.....
100, Mumford Hill	13.08	18.15	1878	9.94	1882	12.33	26.52	1878	5.00	1877	10.71	30.15	1879	3.60	1881
101, Camp Wright	8.92	15.83	1866	2.66	1871	6.50	19.78	1872	1.06	1875	5.22	11.80	1866	1.76	1875
102, Laytonville	6.73	9.35	.....	4.94	.....	2.45	3.84	.....	0.30	.....	3.29	6.22	.....	0.22	....
103, Westport	4.40	.....	.....	.....	.....	3.54	.....	.....	.....	.....	2.52	.....	.....	.....	.....
104, Mendocino	9.90	27.49	1878	3.98	1883	8.90	23.66	1878	1.37	'85 '86	7.36	22.09	1876	0.34	1885
105, Cahto	12.75	.....	.....	.....	.....	10.00	.....	.....	.....	.....	10.05	.....	.....	.....	.....
106, Ukiah	6.88	19.03	1878	2.51	.....	4.78	17.24	1878	0.23	.....	4.57	14.47	1879	0.25	....
107, Point Arenas	5.90	18.40	1878	1.74	1883	5.16	17.26	1878	1.10	1883	4.84	11.05	1876	0.28	....
108, Orland	1.98	.....	.....	.....	.....	2.05	.....	.....	.....	.....	2.07	.....	.....	.....	.....

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
70, Camp Lincoln	7.16	10.06	1867	3.99	1869	0.92	1.90	1868	0.27	1869	3.15	5.11	1868	1.20	1869
71, Crescent City	8.58	16.20	1882	1.32	....	2.75	4.24	1882	1.47	.....	2.31	10.10	1881	0.11	....
72, Fort Ter Waw	6.07	8.20	1861	3.47	1859	3.63	5.12	1860	2.00	1859	0.18	0.30	1859	0.05	1860
73, Yreka	1.04	2.23	1880	0.17	1875	0.83	1.76	1883	0.00	1881	0.39	1.78	1884	0.00	(1)
74, Scott Valley	1.84	5.39	1880	0.02	1866	0.98	2.65	1883	0.05	1865	0.46	1.93	1863	0.00	1883
75, Fort Jones	1.25	1.99	1854	0.00	1857	1.21	2.77	1856	0.21	1854	0.69	1.86	1857	0.08	1855
76, Berryvale	3.90	6.15	1883	1.65	1882	0.30	0.60	1882	0.00	1883	0.00	0.00	.....	0.00	....
77, Almaden	1.60	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
78, Fort Bidwell	1.68	5.60	1880	0.00	1871	1.37	4.66	1877	0.00	1867	1.13	4.29	1884	0.00	1883
79, Little Hot Springs	1.73	.....	.....	.....	.....	1.51	.....	.....	.....	.....	0.76	.....	.....	.....	.....
80, Fort Gaston	4.70	13.95	1880	0.28	1886	1.74	4.30	1883	0.35	1865	0.75	2.94	1862	0.00	(1)
81, Blue Lake	8.14	.....	.....	.....	.....	2.08	.....	.....	.....	.....	1.04	.....	.....	.....	.....
82, Arcata	7.38	.....	.....	.....	.....	1.32	.....	.....	.....	.....	0.00	.....	.....	.....	.....
83, Fort Humboldt	2.82	5.58	1854	0.00	1865	1.24	3.83	1860	0.01	1865	0.47	1.60	1855	0.00	'60 '65
84, Humboldt Light-House	3.56	6.53	.....	0.00	1881	1.08	2.15	1880	0.00	1881	0.36	1.46	1877	0.00	'81 '82
85, Hydesville	5.73	9.15	1886	1.76	.....	0.93	1.28	1886	0.50	.....	0.54	1.00	.....	0.00	1886
86, Cape Mendocino	3.15	5.43	1886	0.92	1885	0.74	1.67	1883	0.33	1884	0.58	1.32	1885	0.02	1883
87, Orleans	5.76	8.93	.....	2.48	.....	1.02	1.69	.....	0.36	.....	0.46	0.92	.....	.....	.....
88, Weaverville	3.83	10.78	1880	0.19	1875	1.75	4.02	1879	0.22	1870	0.93	2.93	1884	0.00	(1)
89, Fort Crook	1.59	3.09	1860	0.87	1866	1.25	3.06	1860	0.13	1858	0.57	2.45	1862	0.00	'59 '63
90, Delta	8.66	16.55	1884	2.54	1885	4.55	9.94	1883	0.67	1885	2.03	7.12	1884	0.00	1883
91, Anderson	5.42	.....	.....	.....	.....	2.15	.....	.....	.....	.....	0.03	.....	.....	.....	.....
92, Reed's Camp	10.88	19.26	1880	4.11	1882	3.75	9.94	1883	0.00	1880	1.95	7.12	1884	0.00	(1)
93, Redding	3.66	9.73	1880	0.01	1875	1.45	4.26	1883	0.00	(1)	0.45	0.95	1887	0.00	(1)
94, Fort Reading	3.92	5.17	1855	2.87	1852	2.85	5.43	1855	0.73	1853	0.31	1.06	1852	0.00	'53 '54
95, Red Bluff	2.18	4.63	1886	0.00	1875	0.78	2.11	1879	0.00	'72 '75	0.37	1.42	1885	0.00	(1)
96, Tehama	1.37	4.00	1886	0.00	1875	0.54	2.75	1883	0.00	(1)	0.24	1.55	1884	0.00	(2)
97, Corning	2.08	.....	.....	.....	.....	0.44	.....	.....	.....	.....	0.02	.....	.....	.....	.....
98, Indian Valley	7.00	.....	.....	.....	.....	0.50	.....	.....	.....	.....	0.00	.....	.....	.....	.....
99, Meadow Valley	3.20	.....	.....	.....	.....	1.99	.....	.....	.....	.....	1.09	.....	.....	.....	.....
100, Mumford Hill	7.56	23.54	1880	2.10	1878	2.96	6.42	1880	0.84	1881	0.57	1.13	1879	0.00	(1)
101, Camp Wright	1.95	4.51	1869	0.36	1865	0.77	2.32	1875	0.01	1867	0.22	1.58	1868	0.00	(2)
102, Laytonville	4.98	8.14	.....	1.81	.....	0.24	0.41	.....	0.08	.....	0.34	0.39	.....	0.29	....
103, Westport	4.57	.....	.....	.....	.....	1.32	.....	.....	.....	.....	0.31	.....	.....	.....	.....
104, Mendocino	4.77	15.09	1880	0.10	1875	1.31	2.90	1879	0.00	(1)	0.39	2.05	1875	0.00	(2)
105, Cahto	6.00	.....	.....	.....	.....	2.25	.....	.....	.....	.....	0.02	.....	.....	.....	.....
106, Ukiah	3.52	11.78	1880	0.43	.....	0.98	2.71	1883	0.08	1881	0.12	1.01	1884	0.00	(2)
107, Point Arenas	3.23	8.04	1880	0.00	1878	0.82	1.76	1876	0.00	1882	0.22	1.13	1884	0.00	(1)
108, Orland	1.79	.....	.....	.....	.....	0.66	.....	.....	.....	.....	0.34	.....	.....	.....	.....

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
70, Camp Lincoln	0.02	0.05	1867	0.00	1868	0.05	0.10	1868	0.00	1867	0.30	1.30	1867	0.00	1868
71, Crescent City	0.65	2.47	1881	0.00		0.08	0.32	1881	0.00	(1)	3.49	7.23	....	1.45	1882
72, Fort Ter Waw	2.42	4.75	1859	0.08	1858	0.71	1.42	1858	0.00	1859	4.57	6.61	1859	2.54	1860
73, Yreka	0.26	1.33	1884	0.00	(1)	0.08	0.51	1884	0.00	(2)	0.37	0.90	(1)	0.00	(1)
74, Scott Valley	0.49	2.49	1882	0.00	(1)	0.20	1.50	1876	0.00	(1)	0.50	1.44	1882	0.00	(1)
75, Fort Jones	0.06	0.20	1854	0.00	(2)	0.07	0.21	1854	0.00	(2)	0.20	0.60	1857	0.00	'54 '56
76, Berryvale	0.00					0.00					1.19				
77, Almaden	0.00					0.00					0.20				
78, Fort Bidwell	0.31	0.76	1870	0.00	(1)	0.20	1.40	1867	0.00	(1)	0.38	2.80	1867	0.00	(1)
79, Little Hot Springs	0.79					1.60					0.00				
80, Fort Gaston	0.12	0.72	1863	0.00	(2)	0.11	0.97	1879	0.00	(2)	0.80	3.00	1876	0.00	(1)
81, Blue Lake	0.47					(T)					2.08				
82, Arcata	0.00					0.00					0.00				
83, Fort Humboldt	0.19	0.90	1860	0.00	(2)	0.07	0.45	1858	0.00	(2)	0.58	1.94	1859	0.00	(1)
84, Humboldt Light-House	0.03	0.10	1879	0.00	(1)	0.04	0.21	1879	0.00	(2)	0.62	1.75	1883	0.00	(1)
85, Hydesville	0.14	0.05	.....	0.00	.....	0.01	0.02	.....	0.00	.....	0.87	2.40	....	1.05	.....
86, Cape Mendocino	0.31	0.46	1886	0.00	1883	0.28	0.82	1885	0.00	82 '83	0.91	1.59	1885	0.15	1886
87, Orleans	0.32	0.64	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.08	0.16	.....	0.00	.....
88, Weaverville	0.13	0.47	1876	0.00	(2)	0.05	0.36	1880	0.00	(2)	0.54	1.80	1873	0.00	(1)
89, Fort Crook	0.25	2.22	1860	0.00	(2)	0.01	0.05	1859	0.00	(2)	0.39	1.80	1859	0.00	(1)
90, Delta	0.05	0.25	1884	0.00	(2)	0.00	0.00	.....	0.00	.....	0.02	0.10	1882	0.00	1883
91, Anderson†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
92, Reed's Camp	0.06	0.25	1884	0.00	(2)	0.00	0.00	.....	0.00	.....	0.57	2.17	1881	0.00	'80 '83
93, Redding	0.05	0.63	1876	0.00	(2)	0.06	0.65	1876	0.00	(2)	0.37	1.32	1878	0.00	(1)
94, Fort Reading	(T)	0.01	1854	0.00	(2)	0.06	0.24	1853	0.00	(2)	0.16	0.60	1855	0.00	'52 '54
95, Red Bluff	(T)	0.08	1879	0.00	(2)	0.05	0.37	1870	0.00	(2)	0.41	2.50	1885	0.00	(1)
96, Tehama	0.05	0.75	1876	0.00	(2)	0.06	0.70	1878	0.00	(2)	0.18	1.10	1872	0.00	(2)
97, Corning	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	.....	.....	.....	.....
98, Indian Valley	.....	.....	.....	.....	.....	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
99, Meadow Valley	2.40	.....	.....	.....	.....	1.13	.....	.....	.....	.....	1.53	.....	.....	.....	.....
100, Mumford Hill	0.14	0.52	1877	0.00	(2)	0.32	0.90	1880	0.00	(1)	0.69	2.10	1878	0.00	(2)
101, Camp Wright	0.01	0.10	1873	0.00	(2)	0.02	0.20	1872	0.00	(2)	0.40	1.56	1867	0.00	(1)
102, Laytonville	0.92	1.84	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.34	0.63	.....	0.04	....
103, Westport	0.05	.....	.....	.....	.....	(T)	.....	.....	.....	.....	0.88	.....	.....	.....	.....
104, Mendocino	0.08	0.50	1873	0.00	(2)	0.05	0.82	1885	0.00	(2)	0.45	2.40	1878	0.00	(1)
105, Cahto	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.20	.....	.....	.....	.....
106, Ukiah	0.00	0.00	.....	0.00	.....	0.01	0.12	1879	0.00	(2)	0.48	1.15	1883	0.00	'77 '80
107, Point Arenas	0.01	0.16	.....	0.00	(2)	0.01	0.08	1876	0.00	(2)	0.32	0.85	1878	0.00	(1)
108, Orland	0.00	.....	.....	.....	.....	(T)	.....	.....	.....	.....	0.19	.....	.....	.....	.....

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
70, Camp Lincoln	1.82	2.30	1868	1.34	1866	9.48	11.55	1866	8.10	1868	15.58	16.72	1867	14.06	1866	73.23	.....	.....	.....	.....
71, Crescent City	10.22	20.19	1883	3.77	.....	11.37	31.93	.....	3.14	1883	18.90	27.01	.....	9.65	1884	88.77	113.45	81–82*	69.72	83–84*
72, Fort Ter Waw	4.52	7.25	1860	2.29	1861	12.71	15.35	1859	10.07	1860	11.52	15.60	1860	7.44	1859	69.59	.....	.....	.....	.....
73, Yreka	1.46	3.34	1875	0.13	1880	1.77	5.29	1875	0.10	1880	2.52	7.23	1879	0.00	1874	15.21	22.48	75–76*	10.53	74–75*
74, Scott Valley	1.24	4.45	1875	0.01	1869	3.15	11.56	1861	0.12	1862	4.96	12.75	1864	0.01	1876	24.11	40.96	61–62*	13.05	74–75*
75, Fort Jones	1.39	4.18	1854	0.13	1856	2.59	4.47	'53 '57	0.48	1851	4.39	8.93	1856	1.13	1854	21.60	32.03	57–58*	18.89	54–55*
76, Berryvale	3.48	4.44	1882	2.53	1881	3.27	3.34	1881	3.20	1882	5.09	8.54	1881	1.65	1882	28.84	.....	.....	.....	.....
77, Almaden	0.05	.....	.....	.....	.....	0.60	.....	.....	.....	.....	0.80	.....	.....	.....	.....	14.29	.....	.....	.....	.....
78, Fort Bidwell	0.96	3.55	1881	0.00	1869	2.08	8.62	1885	(T)	1884	3.46	9.10	1870	0.13	1874	20.77	37.20	66–67*	12.24	73–74*
79, Little Hot Spr'gs.	2.81	.....	.....	.....	.....	4.45	.....	.....	.....	.....	2.14	.....	.....	.....	.....	27.13	.....	.....	.....	.....
80, Fort Gaston	2.67	12.50	1876	0.00	1866	7.69	24.75	1865	0.60	1862	10.70	28.65	1864	0.00	1876	55.42	125.36	65–66*	31.72	72–73*
81, Blue Lake	1.91	.....	.....	.....	.....	16.68	.....	.....	.....	.....	20.08	.....	.....	.....	.....	76.46	.....	.....	.....	.....
82, Arcata	3.19	.....	.....	.....	.....	1.77	.....	.....	.....	.....	9.03	.....	.....	.....	.....	37.69	.....	.....	.....	.....
83, Fort Humboldt	1.78	4.53	1860	0.02	1864	4.13	10.90	1865	0.00	'61 '62	7.59	11.81	1864	1.19	1854	35.91	47.43	65–66*	23.11	64–65*
84, Humboldt Light-House	2.07	4.37	1881	0.48	1875	4.04	13.56	..	0.25	1880	5.84	9.43	...	2.00	1878	33.02	48.76	75–76*	20.62	.....
85, Hydesville	1.69	3.06	1886	0.98	...	5.68	18.37	...	0.69	...	8.42	12.01	.....	5.14	.....	37.15	55.70	....	26.81	.....
86, Cape Mendocino	1.88	3.04	1886	0.52	1884	2.52	7.34	1885	0.40	1884	2.76	3.49	1886	2.25	1883	19.60	27.74	.....	11.94	.....
87, Orleans	1.82	3.64	...	0.00	.....	9.49	18.82	....	0.17	....	11.16	12.60	.....	9.73	.....	44.65	.....	.....	.....	.....
88, Weaverville	2.85	8.36	1882	0.11	...	5.95	16.56	...	0.78	1882	7.74	14.14	1880	0.29	1876	42.45	65.22	77–78*	24.72	74–75*
89, Fort Crook	1.06	3.67	1858	0.00	'59 '66	2.81	8.75	1865	0.00	1862	5.38	11.75	1866	1.00	1859	23.32	40.36	61–62*	13.19	62–63*
90, Delta	4.54	9.20	1882	0.00	1887	6.70	29.38	1885	0.30	1886	9.21	16.14	1884	3.94	1882	53.00	75.24	85–86*	33.30	84–85*
91, Anderson†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
92, Reed's Camp	5.63	9.20	1882	0.00	1880	3.72	8.14	1882	0.00	1880	12.06	32.07	1880	3.94	1882	69.95	95.46	80–81*	55.27	82–83*
93, Redding	1.89	5.60	1876	0.00	'74 '87	3.62	13.31	1875	0.00	'74 '84	6.74	18.39	1880	0.00	1876	34.25	59.92	77–78*	8.78	74–75*
94, Fort Reading	0.69	2.26	1854	0.00	1855	3.20	8.48	1852	0.87	1854	5.78	11.18	1852	1.45	1854	29.03	40.63	52–53*	16.07	53–54*
95, Red Bluff	1.22	4.28	1874	0.00	(2)	2.84	17.22	1885	0.00	'71 '84	3.76	12.24	1880	0.00	'71 '76	23.99	61.65	77–78*	13.52	72–73*
96, Tehama	0.74	2.72	1882	0.00	(1)	1.91	10.42	1885	0.00	(1)	2.12	6.77	1873	0.00	(1)	13.92	29.82	77–78*	5.16	84–85*
97, Corning	0.94	.....	.....	.....	.....	1.25	.....	.....	.....	.....	2.06	.....	.....	.....	.....	15.17	.....	.....	.....	.....
98, Indian Valley	0.50	.....	.....	.....	.....	0.30	.....	.....	.....	.....	6.75	.....	.....	.....	.....	.....	.....	.....	.....	.....
99, Meadow Valley	2.41	.....	.....	.....	.....	12.10	.....	.....	.....	.....	11.52	.....	.....	.....	.....	57.04	.....	.....	.....	.....
100, Mumford Hill	2.23	4.01	1879	0.00	1880	4.10	7.20	1879	0.76	1880	11.12	24.34	1880	2.10	1877	65.81	80.45	78–79*	59.01	81–82*
101, Camp Wright	1.20	5.61	1874	0.00	'66 '70	6.53	16.67	1865	1.28	1870	11.41	29.03	1867	1.19	1870	43.15	69.87	67–68*	19.86	70–71*
102, Laytonville	1.06	1.07	.....	1.06	.....	7.10	18.91	.....	0.71	.....	10.16	20.08	.....	2.95	....	37.61	40.55	.....	34.98	.....
103, Westport	2.38	.....	.....	.....	.....	10.37	.....	.....	.....	.....	7.44	.....	.....	.....	.....	37.84	.....	.....	.....	.....
104, Mendocino	2.60	9.17	1876	0.03	1871	5.51	19.14	1875	0.40	1884	7.96	17.08	1880	0.28	1876	49.28	80.97	77–78*	29.19	82–83*
105, Cahto	.....	.....	.....	.....	.....	4.95	.....	.....	.....	.....	12.55	.....	.....	.....	.....	.....	.....	.....	.....	.....
106, Ukiah	1.43	3.70	1878	0.00	1880	3.94	19.24	.....	0.00	1878	6.21	12.94	.....	0.68	1878	32.92	54.88	77–78*	19.88	.....
107, Point Arenas	1.73	4.91	1876	0.20	1880	3.55	15.64	..	0.05	1876	4.74	9.90	....	0.00	1876	30.53	53.24	77–78*	17.35	.....
108, Orland	0.64	.....	.....	.....	.....	2.05	.....	.....	.....	.....	3.30	.....	.....	.....	.....	15.07	.....	.....	.....	.....

*Seasonal rain-fall September to August, inclusive. †No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
109, Willows	1.99	5.42	1884	0.17	1887	1.37	3.11	1884	0.23	1883	1.30	4.80	1884	0.05	188
110, Princeton	2.98	10.43	1878	0.65	1883	2.22	7.64	1878	0.15	1875	1.67	5.08	1884	0.21	....
111, Little Stony	2.50	.....	.....	.....	.....	1.04	.....	.....	.....	.....	0.55	.....	.....	.....	.....
112, Colusa	3.67	13.07	1878	0.87	1873	2.82	11.38	1878	0.00	1875	1.86	5.70	1884	0.35	....
113, Fouts Springs	5.64	.....	.....	.....	.....	4.04	.....	.....	.....	.....	2.93	.....	.....	.....	.....
114, Williams	2.55	4.02	1881	0.35	1887	1.75	6.75	1878	0.00	1886	1.34	3.93	1884	0.15	1885
115, College City	2.30	3.61	.....	1.64	.....	0.91	2.21	....	0.04	....	3.01	5.46	.....	0.56	....
116, Cantelope Valley	5.16	.....	.....	.....	.....	2.71	.....	.....	.....	.....	3.07	.....	.....	.....	.....
117, Near Paradise City	2.62	.....	.....	.....	.....	3.53	.....	.....	.....	.....	3.54	.....	.....	.....	.....
118, Chico	3.92	12.04	1878	0.67	1883	3.57	10.01	1878	0.27	1883	2.28	5.57	1884	0.30	1885
119, Cherokee	8.37	19.63	1878	1.42	1883	7.55	20.00	1878	0.38	1875	7.95	18.23	1879	0.59	1873
120, Oroville	3.49	7.15	.....	2.01	.....	3.11	4.64	.....	0.36	.....	1.25	2.70	.....	0.00	....
121, Cherokee Reservoir	13.35	23.54	1878	8.89	1879	9.95	21.00	1878	0.61	1875	11.69	21.06	1879	3.76	1875
122, Downieville†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
123, Smartville	7.11	11.43	1875	2.67	1873	5.70	13.50	1872	0.24	1875	4.48	9.68	1879	1.53	1873
124, Marysville	3.28	9.47	1878	0.73	1887	2.46	6.09	1887	0.07	1885	1.84	4.06	1876	0.12	1885
125, North Bloomfield	9.37	19.46	1881	0.15	1875	7.81	18.22	1872	0.88	1875	7.58	16.62	1879	0.70	...
126, Bowman's Dam	14.00	27.82	1881	4.49	.....	11.07	27.08	1872	0.25	1875	10.77	20.97	1878	0.80	...
127, Union Ranche†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
128, Boca	4.26	9.00	1876	1.00	1885	3.43	12.70	1887	0.00	1877	2.68	11.33	1882	0.00	1887
129, Truckee	5.98	10.94	1876	1.66	1883	5.84	13.05	1873	0.22	1875	4.16	13.40	1882	0.36	1887
130, Nevada City	10.93	18.88	1881	0.90	1864	7.68	16.67	1872	0.50	1864	8.57	23.30	1868	0.53	....
131, Grass Valley	10.03	19.20	1881	3.05	1883	7.10	17.76	1878	1.39	1875	7.57	18.07	1879	1.39	1873
132, Middletown	7.78	17.85	1881	2.25	1883	3.44	6.80	1882	0.32	..	4.79	12.82	1884	0.70	....
133, Kono Tayee	4.86	14.16	1878	1.03	.....	3.34	11.04	1878	0.38	1875	3.68	9.15	1879	0.00	....
134, West Butte	2.50	4.75	....	0.62	1880	1.13	2.31	1882	0.19	1883	2.18	6.50	1884	0.37	....
135, Nicolaus	3.52	8.62	.....	1.37	.....	2.88	6.81	.....	.....	.....	2.60	6.12	.....	.....	.....
136, Summit	8.39	17.89	1877	1.11	1883	8.96	20.70	1887	0.00	1874	6.78	23.37	1879	0.00	1887
137, Emigrant Gap	10.18	26.07	1881	0.00	1872	9.50	21.08	1873	0.22	1875	8.77	24.57	1874	0.40	1885
138, Cisco	10.83	30.94	1881	1.00	1883	10.74	28.00	1873	0.83	1877	8.79	28.08	1882	0.52	1877
139, Alta	8.56	21.00	1881	1.50	1885	7.26	15.01	1878	0.01	1875	6.92	24.35	1879	0.10	1885
140, Colfax	8.36	15.59	1881	1.68	1883	6.77	13.68	1872	0.19	1875	6.28	14.64	1876	0.68	1885
141, Lower Soda Springs	0.97	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
142, Auburn	6.13	10.61	1878	1.74	1885	5.23	12.38	1887	0.00	1886	4.49	10.17	1884	0.53	1873
143, Rocklin	3.95	8.90	1874	0.75	1887	2.97	7.76	1878	0.05	1875	2.56	5.77	1884	0.00	1885
144, Dunnigan	3.52	10.50	1878	0.70	1880	2.22	6.93	1887	(T)	1886	2.08	5.78	1884	0.13	1885
145, Knight's Landing	2.11	5.53	1886	0.00	1878	2.57	6.60	1887	0.00	'85 '86	1.88	4.09	1884	0.00	1887
146, Woodland	3.36	8.17	1878	0.80	1887	2.48	8.36	1878	0.00	1886	2.07	4.74	1879	0.10	1885
147, Davisville	3.23	8.72	1878	0.99	1887	2.23	6.49	1878	0.00	1875	1.83	5.09	1884	0.06	1872

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
109, Willows	1.89	3.83	1880	0.63	1882	0.39	1.64	1883	0.00	(1)	0.12	0.90	1884	0.00	(2)
110, Princeton	1.53	4.93	1880	0.00	1877	0.55	2.82	1883	0.05	1884	0.45	2.12	1884	0.00	(1)
111, Little Stony	2.63	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.58	.....	.....	.....	.....
112, Colusa	1.54	6.31	1880	0.00	1877	0.45	3.23	1883	0.00	(1)	0.37	2.88	1884	0.00	(2)
113, Fouts Springs	4.68	.....	.....	.....	.....	0.25	.....	.....	.....	.....	(T)	.....	.....	.....	.....
114, Williams	1.51	3.67	1880	0.05	1877	0.39	1.75	1883	0.00	(1)	0.46	2.96	1884	0.00	(1)
115, College City	1.62	2.48	....	0.76	....	0.08	0.17	.....	0.00	.....	1.12	2.04	....	0.23	.....
116, Cantelope Valley	2.19	.....	.....	.....	.....	0.82	.....	.....	.....	.....	0.24	.....	.....	.....	.....
117, Near Paradise City†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
118, Chico	1.73	5.78	1880	0.00	(1)	0.71	5.01	1883	0.00	(1)	0.34	2.11	1884	0.00	(1)
119, Cherokee	3.37	9.27	1884	0.75	1877	1.47	3.66	1879	0.00	'80 '82	0.60	3.87	1884	0.00	(1)
120, Oroville	2.42	5.48	....	0.00	....	0.29	0.65	.....	.....	.....	0.10	0.39	....	.....	.....
121, Cherokee Reservoir	3.78	7.68	1879	0.10	1875	2.06	5.06	1879	1.00	1876	0.72	2.00	1875	0.00	(1)
122, Downieville†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
123, Smartville	3.16	12.32	1880	0.00	1871	0.88	2.98	1880	0.00	1871	0.44	2.81	1875	0.00	(2)
124, Marysville	1.63	7.73	1880	0.00	1875	0.59	3.50	1883	0.00	(1)	0.25	1.97	1875	0.00	(2)
125, North Bloomfield	5.73	23.31	1880	0.30	1875	2.04	5.63	1880	0.00	1883	0.64	4.03	1884	0.00	(1)
126, Bowman's Dam	7.78	31.72	1880	0.83	1875	2.59	8.90	1880	0.00	1883	0.83	3.53	1884	0.00	(1)
127, Union Ranche	3.08	.....	.....	.....	.....	3.00	.....	.....	.....	.....	0.04	.....	.....	.....	.....
128 Boca	1.51	7.63	1880	0.00	1887	0.40	1.86	1883	0.00	(1)	0.13	1.40	1884	0.00	(2)
129, Truckee	2.67	14.11	1880	0.52	1881	1.05	3.59	1873	0.06	1884	0.39	1.81	1875	0.00	(1)
130, Nevada City	5.14	22.54	1880	0.27	1875	2.06	6.92	....	0.00	1881	0.60	2.47	....	0.00	(1)
131, Grass Valley	5.61	10.98	1884	0.29	1875	1.90	6.23	1880	0.05	1881	0.62	2.30	1884	0.00	(1)
132, Middletown	6.97	22.21	1880	1.32	....	1.23	3.97	1883	.....	.....	0.51	3.28	1884	0.00	(1)
133, Kono Tayee	1.16	3.88	1884	0.00	1874	0.52	2.41	1883	0.00	'76 '77	0.29	4.08	1884	0.00	(1)
134, West Butte	2.57	5.88	1880	0.88	1883	0.85	3.56	1883	0.00	1881	0.32	1.75	1884	0.00	(2)
135, Nicolaus	3.12	11.13	.....	0.00	....	0.60	2.81	.....	.....	.....	0.13	0.68	....	.....	.....
136, Summit	5.77	33.71	1880	0.31	1877	1.68	4.03	1877	0.05	1881	0.62	4.04	1884	0.00	(2)
137, Emigrant Gap	5.65	23.88	1880	0.55	1874	2.47	6.25	1880	0.20	1885	0.74	2.77	1884	0.00	(1)
138, Cisco	5.22	21.09	1880	0.75	1886	2.36	7.57	1883	0.00	'81 '84	0.79	3.54	1884	0.00	(2)
139, Alta	3.67	12.04	1880	0.44	1875	1.38	6.07	1883	0.00	(1)	0.51	3.00	1884	0.00	(2)
140, Colfax	4.97	21.09	1880	0.22	1875	1.63	5.92	1883	0.00	'81 '85	0.52	3.01	1884	0.00	(1)
141, Lower Soda Springs†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
142, Auburn	3.76	13.02	1880	0.11	1875	1.18	4.07	1883	0.00	'81 '85	0.36	1.82	1875	0.00	(2)
143, Rocklin	2.10	7.53	1880	0.00	1875	0.65	3.97	1883	0.00	(1)	0.22	1.25	1875	0.00	(2)
144, Dunnigan	1.89	6.06	1880	0.00	1877	0.63	4.67	1883	0.00	(1)	0.28	2.59	1884	0.00	(2)
145, Knight's Landing	2.47	6.64	1880	0.87	1883	0.64	3.32	1883	0.00	(1)	0.21	0.92	1884	0.00	(2)
146, Woodland	1.84	6.96	1880	0.00	1875	0.54	4.12	1883	0.00	(1)	0.15	1.59	1875	0.00	(2)
147, Davisville	1.60	7.46	1880	0.00	'72 '75	0.38	3.19	1883	0.00	(1)	0.15	1.39	1884	0.00	(2)

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
109, Willows	(T)	0.02	1879	0.00	(2)	0.01	0.05	1879	0.00	(2)	0.13	0.41	1883	0.00	(2)
110, Princeton	0.09	0.90	1876	0.00	(2)	0.08	1.02	....	0.00	(2)	0.08	1.13	....	0.00	(1)
111, Little Stony	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
112, Colusa	0.04	0.54	1876	0.00	(2)	0.02	0.33	1878	0.00	(2)	0.19	1.19	1881	0.00	(2)
113, Fouts Springs	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
114, Williams	0.00	0.00	....	0.00	....	0.01	0.06	1879	0.00	(2)	0.13	0.50	1883	0.00	(2)
115, College City	0.00	0.00	....	0.00	....	(T)	(T)	....	0.00	....	0.37	0.71	.....	0.05	....
116, Cantelope Valley	0.00	.....	.....	.....	.....	0 00	.....	.....	.....	.....	0.25	.....	.....	.....	.....
117, Near Paradise City†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
118, Chico	0.03	0.50	1876	0.00	(2)	0.03	0.20	1879	0.00	(2)	0.27	1.15	1881	0.00	(2)
119, Cherokee	0.11	1.19	1876	0.00	(2)	0 06	0.45	1878	0.00	(2)	0.51	2.60	1879	0.00	(2)
120, Oroville	(T)	(T)	....	0 00	(2)	(T)	(T)	....	0.00	(2)	0.57	2.27	.....	0.00	1880
121, Cherokee Reservoir	0.30	1.00	1876	0.00	(2)	0.21	0.73	1876	0.00	(2)	0.54	1.98	1878	0 00	(2)
122, Downieville	.....	.....	.....	.....	.....	0.01	.....	.....	.....	.....	0.07	.....	.....	.....	.....
123, Smartville	0.05	0.43	1876	0.00	(2)	0.00	0.00	..	0.00	.....	0.11	1.00	1878	0.00	(2)
124, Marysville	0.01	0.11	1876	0.00	(2)	0 01	0.06	1876	0.00	(2)	0.19	1.15	1883	0.00	(2)
125, North Bloomfield	0.12	1.76	1876	0.00	(2)	0 02	0.24	1879	0.00	(2)	0.60	2.74	1882	0.00	(2)
126, Bowman's Dam	0.20	1.28	1876	0.00	(2)	0 02	0.13	1878	0.00	(2)	0.71	2.94	1882	0.00	(2)
127, Union Ranch	0.40	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0 05	.....	.....	.....	.....
128, Boca	0.24	2.00	1871	0.00	(2)	(T)	0.01	1876	0 00	(2)	0.02	0.18	1878	0.00	(2)
129, Truckee	0.21	0.89	1883	0.00	(2)	0 02	0.28	1878	0 00	(1)	0.07	0.47	1885	0 00	(2)
130, Nevada City	0.04	0.71	1877	0.00	(1)	0.03	0.75	1864	0.00	(1)	0 54	1.91	1867	0.00	(1)
131, Grass Valley	0.05	0.65	1876	0.00	(1)	0 01	0.08	1879	0 00	(1)	0.69	1.88	1882	0.00	(1)
132, Middletown	0.00	0.00	....	0.00	....	0.00	0.00	....	0.00	.....	0.49	2.55	1883	0.00	1883
133, Kono Tayee	0.00	0.00	....	0.00	....	0.01	0.07	1878	0.00	(1)	0.19	0.73	1877	0.00	(1)
134, West Butte	0.00	0.00	....	0.00	....	0.00	0.00	....	0.00	.....	0.32	0.62	1883	0.00	1880
135, Nicolaus	0.00	0.00	.....	0 00	.....	(T)	(T)	....	0 00	....	0.22	0.75	....	0 00	....
136, Summit	0.08	1.26	1877	0 00	(1)	0.01	0.10	1877	0.00	(1)	0.19	0 83	1882	0 00	(1)
137, Emigrant Gap	0.02	0.30	1876	0.00	(1)	0.01	0.13	1887	0.00	(1)	0.32	1.70	1881	0.00	(1)
138, Cisco	0.11	1.80	1877	0.00	(1)	0 00	0.00	....	0.00	.....	0.28	2.16	1881	0.00	(2)
139, Alta	(T)	0.02	1876	0.00	(1)	0.00	0.00	...	0.00	.....	0.34	2.70	1882	0.00	(1)
140, Colfax	0.00	0.00	....	0.00	....	0.00	0.00	....	0.00	.....	0.32	1.63	1881	0.00	(1)
141, Lower Soda Springs†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
142, Auburn	0.02	0.41	1876	0.00	(1)	0.01	0.21	1876	0.00	(1)	0.34	1.70	1883	0.00	(1)
143, Rocklin	0.02	0.25	1876	0 00	(1)	0 01	0 20	1876	0.00	(1)	0.10	1.10	1883	0.00	(1)
144, Dunnigan	0.00	0.00	.....	0 00	....	0.00	0 00	....	0.00	.....	0.15	0.77	1881	0.00	(1)
145, Knight's Landing	0.00	0.00	....	0.00	.....	(T)	0.05	1879	0.00	(1)	0.11	0.71	1882	0.00	(1)
146, Woodland	0.01	0.16	1876	0 00	(1)	0.00	.....	.....	0.00	.....	0.08	0.59	1882	0.00	(1)
147, Davisville	0.01	0.20	1876	0.00	(1)	(T)	0.02	1876	0.00	(1)	0.10	0.72	1883	0.00	(1)

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
109, Willows	0.59	1.30	1883	0.00	(1)	1.46	7.28	1885	0.00	1886	2.51	6.33	1880	0.05	1883	11.76	18.84	83–84*	6.47	78–79*
110, Princeton	0.25	4.60	1876	0.00	1880	1.02	7.21	....	.....	..	2.60	7.25	1873	0.00	1876	13.52	26.30	77–78*	10.20	76–77*
111, Little Stony	0.27	.....	.....	.....	.....	13.29	.....	.....	.....	.....	3.51	.....	.....	.....	.....	24.37	.....	.....	.....	.....
112, Colusa	1.04	4.72	1876	0.00	(1)	1.82	7.69	....	0.00	1876	3.17	9.63	1880	0.00	1876	16.99	32.84	77–78*	9.20	76–77*
113, Fouts Springs	0.45	.....	.....	.....	.....	9.81	.....	.....	.....	.....	3.84	.....	.....	.....	.....	31.64	.....	.....	.....	.....
114, Williams†	0.43	1.13	1882	0.00	(1)	1.15	6.51	1885	0.00	(1)	1.99	7.48	1880	0.00	1878	11.71	21.64	77–78*	3.94	76–77*
115, College City	0.80	0.92	.....	0.56	.....	3.07	8.79	....	0.41	....	2.30	5.14	.....	0.51	.....	15.58	.....	.....	.....	.....
116, Cantelope Valley	0.54	.....	.....	.....	.....	3.02	.....	.....	.....	.....	4.92	.....	.....	.....	.....	22.92	.....	.....	.....	.....
117, N'r Paradise City†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
118, Chico	1.02	4.03	1876	0.00	(1)	2.39	8.99	1885	0.00	1884	3.77	10.11	1871	0.00	1876	20.06	34.72	77–78*	12.91	84–85*
119, Cherokee	2.95	10.19	1876	0.00	1880	5.40	14.28	1874	0.39	1881	6.59	16.84	1880	0.69	1878	44.93	68.26	77–78*	28.35	72–73*
120, Oroville	0.80	2.08	....	0.00	....	3.34	11.27	....	0.05	...	9.46	10.60	1880	4.69	1881	24.83	31.21	.....	18.46	81–82*
121, Cherokee Reser'r	4.08	12.90	1876	0.00	1873	7.80	16.99	1874	0.00	1876	5.77	18.25	1873	0.00	1878	60.27	78.78	77–78*	42.34	76–77*
122, Downieville	4.19	.....	.....	.....	.....	11.33	.....	.....	.....	.....	6.78	.....	.....	.....	.....	.....	.....	.....	.....	.....
123, Smartville	1.50	5.41	1876	0.00	(1)	3.74	9.90	1874	0.00	1871	5.01	19.02	1873	0.00	(1)	32 18	46.78	73–74*	17.99	76–77*
124, Marysville	0.89	2.40	1882	0.00	(1)	1.74	8.23	1885	0.00	1884	3.33	12.45	1873	0.00	1876	16.22	26.86	73–74*	6.65	70–71*
125, North Bloomfield	2.90	10.46	1876	0.00	1880	5.84	20.23	....	0.00	....	9.83	27.21	....	0.00	1876	52.48	74.52	71–72*	27.87	74–75*
126, Bowman's Dam	3 65	11.47	1882	0.00	1880	7.94	24.96	.....	0.53	1876	14 00	46.57	....	0 00	1876	73.56	102.22	71–72*	44.37	76–77*
127 Union Ranch	.....	.....	.....	.....	.....	7.21	.....	.....	.....	.....	2.63	.....	.....	.....	.....	.....	.....	.....	.....	.....
128, Boca	0.57	2.60	1883	0.00	(2)	0.91	3.83	1874	0.00	(2)	2.72	8.20	1884	0.00	1878	16.87	23.40	83–84*	8.07	76–77*
129, Truckee	1.24	4.66	1879	0.00	(1)	2.11	6.95	1885	0.00	1884	4.35	16.90	1871	0.00	1876	28.09	47.21	71–72	13 88	82–83*
130, Nevada City	1.82	9.85	1876	0.00	(1)	6 77	21.55	..	0.00	..	12.09	41.95	1867	0.00	1876	56.27	115.26	67–68	17.28	.....
131, Grass Valley	2.81	8.72	1876	0.00	1872	6.06	16.99	1875	0.00	1872	8.17	22.69	1886	0.00	1876	50.62	65.32	75–76*	30.23	76–77*
132, Middletown	1.43	2.93	1882	0.06	1880	4 94	19.42	.....	0.02	1880	10.41	22.93	....	1.47	1882	41.99	52.04	.....	28.43	81–82*
133, Kono Tayee	1.02	3.70	1874	0.00	1873	4.21	15.37	.....	0.00	1873	2.53	8.06	....	0.00	1876	21.81	31.96	75–76*	12.08	76–77*
134, West Butte	0.73	1.12	1881	0.00	1880	1.83	7.45	.....	0.00	1883	2.67	5.38	1880	0.19	1883	15.10	19 80	83–84*	12.13	.....
135, Nicolaus	0.90	2.56	.....	0.00	.....	1.98	9.34	.....	0.00	...	3.28	10.62	.....	0.31	....	19.23	26.76	.....	8.93	.....
136, Summit	2.34	13.26	1882	0.00	(1)	2.82	9.33	1871	0.00	(1)	7.52	28.84	1871	0.22	1876	44.96	87.99	79–80*	23.34	73–74*
137, Emigrant Gap	2.45	8.01	1882	0.00	(1)	3.25	18.69	1885	0.00	1884	8.13	31.20	1884	0 00	1871	51.49	85.17	79–80*	18.64	74–75*
138, Cisco	2.17	8.43	1882	0.00	1885	4.56	17.05	1885	0.00	1884	9.25	28.39	1871	0 22	1876	55.10	80.46	80–81*	34.00	76–77*
139, Alta	2.17	7.65	1882	0.00	(1)	4.81	18.74	1875	0.00	1884	6.52	16.41	1873	0 00	1872	42.14	69.70	78–79*	17.24	72–73*
140, Colfax	1.74	7.98	1876	0.00	(1)	5.06	15.48	1885	0.00	1880	7.67	23.60	1884	0.00	1876	43.33	60.06	75–76*	27.61	76–77*
141, Lo'r Soda Sp'gs †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
142, Auburn	1.42	5.19	1882	0.00	(1)	3.49	15.24	1885	0.00	1884	5 94	16.27	1884	0.00	1876	37.37	44.87	75–76*	17.50	70–71*
143, Rocklin	0.80	3.39	1882	0.00	(1)	1.74	5.02	1875	0.00	1880	3.59	8.81	1871	0.00	1876	18.71	26.06	77–78*	10.26	76–77*
144, Dunnigan	0.61	1.45	1885	0.00	(1)	1.56	10.47	1885	0.00	1884	2.80	10 23	1880	0.00	1876	15.74	29.50	85–86*	3.48	76–77*
145, Knight's Land'g	0.39	1.51	1882	0.00	(1)	1.48	8.00	1885	0.00	(1)	2.50	6.90	1880	0.00	1877	14.36	24.08	85–86*	9.67	77–78*
146, Woodland	0.54	3.26	1874	0.00	(1)	1.17	3.87	1875	0.00	(1)	2.98	10.44	1873	0.00	1876	15.22	25.32	77–78*	5.13	76–77*
147, Davisville	0.62	3.03	1876	0.00	(1)	1.52	7.87	1885	0.00	(1)	3.75	11.55	1871	0.00	1876	15.42	24.50	85–86*	8.66	76–77*

* Seasonal rain-fall September to August, inclusive. † No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
148, Georgetown	11.53	20.83	1881	4.08	1873	8.00	22.78	1878	0.04	1875	9.23	19.94	1884	0.24	....
149, Placerville	9.10	15.53	1881	3.74	1883	4.28	11.56	1884	0.08	1875	6 34	14.46	1884	0.00	1877
150, Shingle Springs	7.72	34.13	1862	1.22	1859	3.71	12.00	1859	0.40	1851	5.14	14.39	1868	0.63	1864
151, Healdsburgh	5.52	9.17	1872	1.87	1883	9.31	13.45	1872	5.17	1873	2.28	6.84	1878	0.00	'72 '73
152, Santa Rosa	6.32	.....	.....	.....	.....	3.05	.....	.....	.....	.....	3.95	.....	.....	.....	.....
153, Sonoma	4.89	.....	.....	.....	.....	6.02	.....	.....	.....	.....	1.15	.....	.....	.....	.....
154, Templeville	0.61	.....	.....	.....	.....	7.21	.....	.....	.....	.....	0.47	.....	.....	.....	.....
155, Stony Point†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
156, Petaluma	4.75	15.62	1878	0.13	.....	3.82	11.99	1878	0.00	1886	2.51	7,48	1879	0.00	1873
157, Calistoga	6.83	20.64	1878	0.20	1873	5.20	16.46	1878	(T)	1886	4.29	15.70	1879	0.71	1885
158, Napa City	5.36	14.18	1878	1.87	1887	3.82	10.68	1887	0.00	1886	2.89	8.36	1879	0.43	1885
159, Knoxville	4.06	.....	.....	.....	.....	8.09	.....	.....	.....	.....	11.72	.....	.....	.....	.....
160, Folsom	4.48	8.41	1878	1.51	1880	3.28	8.37	1878	0.04	1875	3.14	8.14	1884	0.15	....
161, Sacramento	3.77	15.04	1862	0.58	1852	2.89	8.50	1854	0.12	1852	2.86	10.00	1850	0.08	1885
162, Camp Far West	6.92	.....	.....	.....	.....	1.26	.....	.....	.....	.....	12.70	.....	.....	.....	.....
163, Brighton	2.83	8.38	1878	0.80	1887	3.16	6.49	1878	0.07	1886	2.52	5.32	1884	0.00	1885
164, Galt	2.76	6.04	1886	0.61	1887	2.44	5.55	1878	0.00	1886	2.37	5.46	1884	0.00	1885
165, Ione	2.88	5.28	1878	0.83	1887	3.28	7.26	1887	0.00	1885	3.06	7.87	1884	0.00	1885
166, Sutter Creek	6.56	.....	.....	.....	.....	4.91	.....	.....	.....	.....	4.90	.....	.....	.....	.....
167, Jackson	5.18	8.86	1881	1.89	....	4.69	13.24	....	0.27	....	4.88	9.41	1884	0.26	....
168, Winters	5.95	.....	.....	.....	.....	0.14	.....	.....	.....	.....	1.77	.....	.....	.....	.....
169, Elmira	4.51	8.01	1886	1.01	1887	3.55	7.10	1887	0.00	1886	0.95	1.35	1886	0.55	1887
170, Vacaville	5.02	15.61	1881	1.34	1887	3.62	9.40	1887	0.17	1886	3.34	11.45	1884	0.28	1885
171, Denverton	4.33	.....	.....	.....	.....	2.29	.....	.....	.....	.....	2.53	.....	.....	.....	.....
172, Suisun and Fairfield	4.20	10.91	1878	0.64	1873	2.78	8.66	1878	(T)	1886	2.32	7.70	1879	0.20	1872
173, Rio Vista	3.08	.....	.....	.....	.....	1.54	.....	.....	.....	.....	2.78	.....	.....	.....	.....
174, South Vallejo	3.04	7.64	1878	0.75	1873	2.23	7.72	1887	0.00	'75 '86	2.42	6.06	1884	0.24	1885
175, Bird's Landing	2.68	.....	.....	.....	.....	1.78	.....	.....	.....	.....	3.19	.....	.....	.....	.....
176, Benicia Barracks	3.16	10.97	1862	0.00	1871	2.27	7.37	1878	0.00	'52 '75	2.38	7.93	1884	0.44	1877
177, Point Reyes	4.29	8.55	1881	0.00	1883	3.24	6.24	1878	0.00	1883	3.94	5.60	1884	0.55	1878
178, San Rafael	8.69	25.35	1878	1.66	1883	4.96	18.57	1878	0.00	1875	5.45	11.76	1884	0.64	1881
179, Ross Valley	7.81	12.32	.....	3.56	.....	2.91	7.43	....	0.28	....	6.44	11.12	....	1.76	....
180, Saucelito	3.91	7.85	....	1.72	.....	2.18	5.57	....	0.09	....	3.50	8.19	.....	0.88	....
181, Angel Island	4.61	9.39	1881	1.38	1871	3.28	9.12	1878	0.00	1875	2.81	7.82	1884	0.60	1873
182, Point Bonita	5.04	9.34	1878	2.29	1882	3.83	14.10	1878	0 00	.....	3.89	8.55	1884	0.79	1879
183, Mare Island	5.08	.....	.....	.....	.....	4.03	.....	.....	.....	.....	2.50	.....	.....	.....	.....
184, Alcatraz Island	3.90	14.40	1862	0.52	1885	2.86	8.64	1878	0.00	1864	1.95	6.02	1884	0.32	1867
185, Fort Point	4.07	.....	.....	.....	.....	2.95	.....	.....	.....	.....	1.90	.....	.....	.....	.....
186, San Francisco	5.06	24.36	1862	0.58	1852	3.76	12.52	1878	0.00	1864	3.07	8.75	1879	0.74	1865

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
148, Georgetown	7.25	25.63	1880	0.31	1875	2.30	7.34	1883	0.12	1873	0.82	3.65	1884	0.00	(1)
149, Placerville	6.18	17.92	1880	0.61	1875	1.77	6.25	1883	0.00	'77 '81	0.75	2.51	1884	0.00	(1)
150, Shingle Springs	3.19	7.34	1862	0.00	1857	1.13	4.88	1866	0.01	1867	0.19	1.90	1862	0.00	(1)
151, Healdsburgh	0.95	2.84	1878	0.00	'72 '73	0.39	1.18	1878	0.00	'72 '73	0.08	0.25	1872	0.00	'73 '78
152, Santa Rosa	1.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
153, Sonoma	3.54	.....	.....	.....	.....	0.29	.....	.....	.....	.....	0.00	.....	.....	.....	.....
154, Templeville	1.51	.....	.....	.....	.....	0.06	.....	.....	.....	.....	0.35	.....	.....	.....	.....
155, Stony Point†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
156, Petaluma	2.11	9.74	.....	0.00	'73 '75	0.53	2.99	1883	0.00	(1)	0.27	2.80	1884	0.00	(2)
157, Calistoga	3.11	15.31	1880	0.00	1875	0.79	3.71	1883	0.00	(1)	0.31	2.06	1884	0.00	(2)
158, Napa City	2.48	11.87	1880	0.00	1884	0.76	1.50	1879	0.00	'82 '85	0.27	2.12	1884	0.00	(2)
159, Knoxville	6.19	.....	.....	.....	.....	0.16	.....	.....	.....	.....	0.00	.....	.....	.....	.....
160, Folsom	2.91	11.39	1880	0.00	1877	0.84	4.57	1883	0.00	1881	0.72	1.64	1884	0.00	(1)
161, Sacramento	1.95	14.20	1880	(T)	1875	0.69	2.85	1883	0.00	(1)	0.13	1.45	1884	0.00	(1)
162, Camp Far West	4.46	.....	.....	.....	.....	0.86	.....	.....	.....	.....	0.00	.....	.....	.....	.....
163, Brighton	2.89	12.29	1880	0.50	1881	0.52	2.99	1883	0.00	(1)	0.20	1.55	1884	0.00	(2)
164, Galt	2.31	7.31	1880	0.81	1883	0.74	4.83	1883	0.00	(1)	0.18	1.36	1884	0.00	(2)
165, Ione	3.39	7.39	1880	1.10	1878	0.81	3.04	1883	0.00	'81 '85	0.30	2.03	1884	0.00	(1)
166, Sutter Creek	4.78	.....	.....	.....	.....	1.33	.....	.....	.....	.....	0.44	.....	.....	.....	.....
167, Jackson	5.17	13.59	1880	1.34	.....	1.24	4.65	.....	0.00	1881	0.32	1.85	1884	0.00	'80 '83
168, Winters	3.90	.....	.....	.....	.....	0.16	.....	.....	.....	.....	0.00	.....	.....	.....	.....
169, Elmira	3.14	4.22	1886	2.06	1887	0.07	0.14	1886	0.00	1887	0.00	0.00	.....	.....	.....
170, Vacaville	4.31	8.26	1880	1.54	1885	1.03	7.58	1880	0.00	(1)	0.00	1.78	1880	0.00	(2)
171, Denverton	1.87	.....	.....	.....	.....	0.56	.....	.....	.....	.....	0.29	.....	.....	.....	.....
172, Suisun and Fairfield	1.74	7.07	1880	0.00	1875	0.53	3.92	1883	0.00	(1)	0.26	1.69	1884	0.00	(2)
173, Rio Vista	2.34	.....	.....	.....	.....	0.75	.....	.....	.....	.....	0.21	.....	.....	.....	.....
174, South Vallejo	2.19	9.54	1880	0.00	1873	0.47	2.53	1883	0.00	(1)	0.18	1.74	1884	0.00	(2)
175, Bird's Landing	1.21	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
176, Benicia Barracks	1.69	8.15	1880	0.00	1857	0.49	3.41	1883	0.00	(1)	0.16	2.47	1884	0.00	(2)
177, Point Reyes	4.06	9.01	1880	0.00	1877	0.76	1.78	.	0.00	(1)	0.20	1.75	1884	0.00	(2)
178, San Rafael	3.94	14.15	1880	0.00	1875	1.19	3.22	1879	0.01	.....	0.40	2.07	1875	0.00	(1)
179, Ross Valley	6.30	8.97	....	3.64	.....	0.16	0.32	....	....	.....	1.40	2.72	.....	0.08	....
180, Saucelito	3.71	6.77	.....	1.69	....	1.06	4.30	....	0.00	....	0.60	2.57	....	0.00	....
181, Angel Island	2.33	10.17	1880	0.01	1875	0.47	3.52	1883	0.00	(1)	0.24	2.66	1884	0.00	(1)
182, Point Bonita	2.49	8.59	1880	0.50	1877	0.97	4.36	1883	0.00	1881	0.39	2.99	1884	0.00	(1)
183, Mare Island	1.14	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.40	.....	.....	.....	.....
184, Alcatraz Island	1.48	8.37	1880	0.00	'66 '75	0.38	3.44	1883	0.00	(1)	0.17	2.11	1884	0.00	(2)
185, Fort Point	1.20	.....	.....	.....	.....	0.56	.....	.....	.....	.....	0 02	.....	.....	.....	.....
186, San Francisco	2.04	10.06	1880	0.00	1857	0.62	3.52	1883	0.00	'50 '67	0.15	2.57	1881	0.00	(1)

(†) No data. (1) Frequently. (2) Generally. (T) Trace of rain fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
148, Georgetown	0.06	0.77	1876	0.00	(1)	(T)	0.01	1884	0.00	(1)	0.49	2.03	1881	0.00	(1)
149, Placerville	0.04	0.49	1876	0.00	(1)	0.01	0.07	1876	0.00	(1)	0.37	1.67	1883	0.00	(2)
150, Shingle Springs	0.19	2.56	1862	0.00	(2)	0.00	0.00	.....	0.00	....	0.23	1.23	1850	0.00	(2)
151, Healdsburgh	0.00	0.00	.....	0.00	.....	0.02	0.05	1872	0.00	1878	0.24	0.70	1878	0.00	1871
152, Santa Rosa†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
153, Sonoma	(T)	.....	.....	.....	.....	0.00	.....	.....	.....	.....	(T)	.....	.....	.....	.....
154, Templeville	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.56	.....	.....	.....	.....
155, Stony Point	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.40	.....	.....	.....	.....
156, Petaluma	(T)	0.06	1877	0.00	(2)	(T)	0.01	1872	0.00	(2)	0.12	0.68	1887	0.00	(1)
157, Calistoga	0.00	0.00	.....	0.00	....	0.00	0.00	....	0.00	.....	0.23	1.14	1883	0.00	(1)
158, Napa City	0.01	0.05	1877	0.00	.....	0.00	0.00	.....	0.00	....	0.43	2.11	1882	0.00	(1)
159, Knoxville	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
160, Folsom	0.02	0.26	1876	0.00	(2)	(T)	0.03	1876	0.00	(2)	0.20	1.82	1883	0.00	(2)
161, Sacramento	0.03	0.63	1860	0.00	(2)	(T)	0.08	1864	0.00	(2)	0.11	1.00	1851	0.00	(1)
162, Camp Far West	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....	2.30	.....	.....	.....	.....
163, Brighton	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.12	0.66	1883	0.00	(2)
164, Galt	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.09	0.62	1883	0.00	(2)
165, Ione	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.18	1.14	1883	0.00	(1)
166, Sutter Creek	0.03	.....	.....	.....	.....	0.02	.....	.....	.....	.....	0.26	.....	.....	.....	.....
167, Jackson	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.42	1.05	....	0.00	(1)
168, Winters	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
169, Elmira	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....
170, Vacaville	0.01	.....	.....	0.00	(2)	0.00	0.00	.....	0.00	.....	0.21	1.10	1882	0.00	(2)
171, Denverton	0.01	.....	.....	.....	.....	(T)	.....	.....	.....	.....	0.14	.....	.....	.....	.....
172, Suisun and Fairfield	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.26	1.00	1871	0.00	(2)
173, Rio Vista	0.00	.....	.....	.....	.....	0.01	.....	.....	.....	.....	0.20	.....	.....	.....	.....
174, South Vallejo	0.00	0.00	.....	0.00	.....	0.00	0.00	....	0.00	.....	0.10	0.61	1883	0.00	(2)
175, Bird's Landing	0.00	.....	.....	.....	.....	0.01	.....	.....	.....	.....	0.05	.....	.....	.....	.....
176, Benicia Barracks	0.01	0.33	1860	0.00	(2)	0.01	0.10	1858	0.00	(2)	0.07	0.68	1883	0.00	(2)
177, Point Reyes	0.00	0.00	....	0.00	....	0.00	0.00	.....	0.00	.....	0.30	0.60	.....	0.00	(2)
178, San Rafael	(T)	0.03	1877	0.00	(2)	0.00	0.00	.....	0.00	.....	0.34	1.84	1882	0.00	(1)
179, Ross Valley	0.00	0.00	.....	0.00	.....	0.00	0.00	....	0.00	.....	0.17	0.28	....	0.03	.....
180, Saucelito	0.02	0.00	....	0.00	.....	0.00	0.00	....	0.00	.....	0.26	0.45	....	0.00	.....
181, Angel Island	0.01	0.24	1886	0.00	(2)	(T)	0.06	1884	0.00	(2)	0.14	0.64	'76 '78	0.00	(1)
182, Point Bonita	0.03	0.39	1877	0.00	(2)	0.00	0.00	.....	0.00	.....	0.25	1.22	1878	0.00	(1)
183, Mare Island	0.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
184, Alcatraz Island	0.01	0.15	1886	0.00	(2)	0.01	0.25	1884	0.00	(2)	0.08	0.30	1884	0.00	(1)
185, Fort Point	0.01	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.05	.....	.....	.....	.....
186, San Francisco	0.02	0.23	1886	0.00	(2)	0.02	0.21	1864	0.00	(2)	0.16	1.03	1851	0.00	(1)

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
148, Georgetown	3.47	11.47	1876	0.00	1872	6.50	24.12	1875	0.03	....	10.29	33.77	....	0.00	1876	60.04	81.24	75-76*	40.48	76-77*
149, Placerville	2.90	6.16	1876	0.00	1873	5.48	17.64	1875	0.00	1873	1.82	22.65	.....	0.00	'73 '76	39.04	61.81	75-76*	22.67	76-77*
150, Shingle Springs	0.78	3.72	1854	0.00	(1)	4.46	11.16	1859	0.37	1862	7.52	23.76	1867	1.99	1857	34.26	81.80	61-62*	17.18	50-51*
151, Healdsburgh	0.11	0.34	1878	0.00	1871	1.81	2.74	1871	0.30	1878	15.22	20.42	1871	10.03	1872	35.93	.....	.....	.....	.....
152, Santa Rosa	.....	.....	.....	.....	.....	2.46	.....	.....	.....	.....	12.07	.....	.....	.....	.....	.....	.....	.....	.....	.....
153, Sonoma	0.95	.....	.....	.....	.....	6.83	.....	.....	.....	.....	3.41	.....	.....	.....	.....	27.08	.....	.....	.....	.....
154, Templeville	0.24	.....	.....	.....	.....	0.79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
155, Stony Point†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
156, Petaluma	0.95	5.20	1876	0.00	'71 '87	2.50	11.33	1885	0.00	1876	4.23	13.86	1871	0.00	1876	21.79	39.17	77-78*	12.75	76-77*
157, Calistoga	1.78	9.05	1876	0.00	(1)	3.06	15.67	1885	0.00	(1)	4.89	15.83	1880	0.00	1876	30.49	50.20	77-78*	7.33	72-73*
158, Napa City	0.67	1.91	1878	0.00	(1)	1.78	8.51	1885	0.00	(1)	3.62	10.16	1884	0.00	1876	22.09	33.64	77-78*	9.30	76-77*
159, Knoxville	1.92	.....	.....	.....	.....	0.85	.....	.....	.....	.....	1.54	.....	.....	.....	.....	34.53	.....	.....	.....	.....
160, Folsom	1.09	3.76	1876	0.00	'73 '80	2.63	10.91	....	0.00	.....	4.59	13.12	1871	0.00	1876	23.90	35.04	.....	9.90	76-77*
161, Sacramento	0.68	3.45	1876	0.00	(1)	2.06	11.34	1885	0.00	1884	4.52	13.41	1852	0.00	1876	19.69	36.38	52-53*	4.71	50-51*
162, Camp Far West	0.10	.....	.....	.....	.....	3.96	.....	.....	.....	.....	8.64	.....	.....	.....	.....	41.20	.....	.....	.....	.....
163, Brighton	0.61	1.80	1882	0.00	(1)	1.46	7.76	1885	0.00	'80 '84	2.22	6.17	1884	0.44	1883	16.53	24.42	79-80*	9.22	81-82*
164, Galt	0.77	2.17	1882	0.00	'80 '85	1.27	5.56	1885	0.00	'80 '84	2.44	6.35	1880	0.25	1882	15.37	19.35	85-86*	9.61	84-85*
165, Ione	0.91	1.82	1884	0.00	(1)	1.67	8.45	1885	0.00	1884	2.86	8.22	1884	0.25	1882	19.34	29.73	83-84*	13.04	82-83*
166, Sutter Creek	1.80	.....	.....	.....	.....	3.88	.....	.....	.....	.....	4.28	.....	.....	.....	.....	33.19	.....	.....	.....	.....
167, Jackson	1.66	5.62	1882	0.00	....	3.04	12.80	.....	0.10	....	4.86	14.64	.....	0.70	1878	31.46	37.90	83-84*	21.20	.....
168, Winters	0.00	.....	.....	.....	.....	8.74	.....	.....	.....	.....	4.74	.....	.....	.....	.....	25.40	.....	.....	.....	.....
169, Elmira	0.19	0.38	1886	0.00	1887	0.38	0.76	1887	0.00	1886	2.72	.....	.....	.....	.....	15.51	.....	.....	.....	.....
170, Vacaville	1.18	3.11	1882	0.00	1880	3.11	15.98	1885	0.00	1884	7.63	21.85	1880	1.15	1882	29.46	45.00	80-81*	20.44	81-82*
171, Denverton	0.98	.....	.....	.....	.....	2.43	.....	.....	.....	.....	2.51	.....	.....	.....	.....	17.94	.....	.....	.....	.....
172, Suisun & Fairf'd	0.69	2.53	.....	0.00	(1)	1.90	10.38	1885	0.00	1884	4.67	16.95	1871	0.00	1876	19.35	31.50	71-72*	6.98	76-77*
173, Rio Vista	0.80	.....	.....	.....	.....	2.07	.....	.....	.....	.....	3.16	.....	.....	.....	.....	16.94	.....	.....	.....	.....
174, South Vallejo	0.65	2.12	1882	0.00	(1)	1.55	7.87	1885	0.00	1884	2.69	10.71	1880	0.00	1876	15.52	26.16	85-86*	7.48	76-77*
175, Bird's Landing	0.84	.....	.....	.....	.....	3.72	.....	.....	.....	.....	1.36	.....	.....	.....	.....	14.84	.....	.....	.....	.....
176, Benicia Barr'ks	1.49	2.80	1876	0.00	(1)	1.78	8.75	1885	0.00	(1)	3.27	11.11	1871	0.00	1876	16.78	28.17	85-86*	5.24	70-71*
177, Point Reyes	1.37	1.80	1882	0.00	(1)	3.81	6.80	1879	0.00	1876	6.12	11.43	1880	0.00	1876	28.09	.....	.....	.....	.....
178, San Rafael	2.30	7.35	1876	0.01	1880	4.68	14.23	1874	0.12	1876	7.03	25.10	....	0.00	1876	38.98	56.40	77-78*	19.22	76-77*
179, Ross Valley	1.84	3.40	.....	0.72	.....	5.51	15.96	....	0.19	.....	10.55	22.85	....	1.11	.....	43.09	.....	.....	.....	.....
180, Saucelito	1.65	3.79	.....	0.45	.....	4.21	12.05	....	0.13	....	5.13	12.34	....	1.31	....	26.23	32.86	.....	19.62	.....
181, Angel Island	1.04	3.03	1876	0.00	'70 '87	2.51	11.57	1885	0.17	1887	3.97	12.06	1880	0.00	1876	21.41	32.54	83-84*	10.93	76-77*
182, Point Bonita	1.70	4.15	1876	0.07	1880	3.15	9.22	.....	0.35	.....	3.73	9.99	.....	0.00	1876	25.47	38.74	77-78*	16.28	78-79*
183, Mare Island	0.62	.....	.....	.....	.....	1.82	.....	.....	.....	.....	7.75	.....	.....	.....	.....	.....	.....	.....	.....	.....
184, Alcatraz Island	0.61	2.63	1882	0.00	(1)	1.87	10.04	1885	0.05	1884	3.66	11.80	1880	0.00	1876	16.98	29.65	80-81*	7.69	76-77*
185, Fort Point	0.56	.....	.....	.....	.....	1.67	.....	.....	.....	.....	4.37	.....	.....	.....	.....	17.36	.....	.....	.....	.....
186, San Francisco	0.85	3.36	1876	0.00	(1)	2.85	11.78	1885	0.15	1862	5.20	16.74	1871	0.00	1876	23.80	49.27	61-62*	7.40	50-51*

†No data. *Seasonal rain-fall, September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
187, Yerba Buena Island	2.59	9.47	1878	1.05	1880	2.09	9.48	1878	0.00	.....	2.23	5.88	1884	0.00	1877
188, Presidio	3.80	8.38	1868	1.26	1887	3.30	10.50	1872	0.00	1875	2.34	8.38	1850	0.50	1865
189, Farallon Islands	2.97	5.89	....	0.56	.....	2.09	4.76	....	0.40	....	2.35	5.15	....	0.67	....
190, Point San José	3.03	.....	.....	.....	.....	2.68	.....	.....	.....	.....	1.52	.....	.....	.....	.....
191, Antioch	1.66	4.74	....	0.38	1887	1.52	3.87	1887	0 00	1886	1.09	5.73	1884	0.35	1885
192, Martinez	2.70	5.39	1886	0.42	1880	2.80	7.25	1878	0.05	1886	2.68	7.97	1884	0.55	1885
193, East Brother Island	1.71	6.19	1878	0.31	1882	0.99	2.94	1878	0.00	.....	0.86	1.60	1884	0.05	1887
194, Brentwood	2.05	4.16	1886	0 38	1887	1.55	5.05	1887	0 03	1886	1.61	4.18	1884	0.01	1887
195, Clayton	1.52	.....	.....	.....	.....	3.19	.....	.....	.....	.....	1.38	.....	.....	.....	.....
196, Mount Diablo	5.16	5.63	1876	4.68	1877	3.44	5.00	1876	1.89	1877	0.58	1.11	1877	0.00	1876
197, Byron	2.11	4.09	1886	0.48	1887	1.59	4.43	1887	0.00	1886	1.84	5.61	1884	0.19	1887
198, Camp Union	4.00	.....	.....	.....	.....	0.92	.....	.....	.....	.....	0.32	.....	.....	.....	.....
199, Farmington	1.82	4.00	1886	0.00	1877	1.93	5.04	1884	0.00	'77 '85	2.12	6.53	1884	0.16	1885
200, Stockton	2.67	5.45	1878	0.36	1887	2.46	8.94	1854	0.05	'85 '86	2.14	5.77	1884	0.23	'85 '87
201, Lathrop	1.94	4.65	1878	0.21	1887	1.88	5.45	1878	0.00	1885	1.54	4.86	1884	0.14	1887
202, Ellis and Tracy	1.63	3.68	1875	0.03	1887	1.44	4.15	1878	0 02	1875	1.23	3.27	1884	0.08	1873
203, Berkeley	1.66	.....	.....	.....	.....	9.41	.....	.....	.....	.....	0.98	.....	.....	.....	.....
204, Oakland	4.71	10.82	1878	1.31	1887	3.46	11.63	1878	0.25	1885	3.35	8.59	1884	0.65	1887
205, Livermore	2.51	5.40	1875	0.90	1887	2.45	6.73	1878	0 20	1886	2.15	5.92	1884	0.36	1871
206, Pleasanton	3.06	7.93	1878	0.79	1887	3.02	8.88	1878	0.22	1885	2.98	6.53	1884	0.68	1887
207, Niles	3.09	7.67	1878	1.07	1873	2.99	9.44	1847	0.15	1885	2.17	5.41	1884	0 27	1871
208, Midway	2.52	3.52	1878	1.51	1879	2.11	4.21	1878	0.00	1879	0.50	0.99	1878	0.00	1879
209, Calaveras Valley	3.79	5.51	1884	1.17	1883	4.28	9.81	1884	1.94	1883	5.47	9.30	1884	2.60	1880
210, Marsh Ranch	7.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.48	.....	.....	.....	.....
211, Langworth	2.38	4.74	....	1.23	....	1.16	4.03	....	0.00	....	2.98	5.28	....	0 62	....
212, La Grange	2.86	5.63	1876	0.88	....	2.83	6.07	1884	0 00	1875	2.40	6.06	1884	0.17	....
213, Modesto	1.72	4.00	1874	0.09	1887	1.21	2.76	1878	0.00	1885	1.19	3.89	1884	0.05	1873
214, Grayson	2.21	5.16	1878	0.67	1871	1.77	4.41	1878	0.12	1875	1.62	5.39	1884	0.13	1873
215, Thurlock	1.65	2.52	1886	0.60	1879	1.40	2.94	1884	0.00	1885	1.35	3.32	1882	0.32	1885
216, Hill's Ferry	1.70	3.81	.....	0.30	1883	1.41	5.76	1884	0.00	.....	2.03	3.94	1884	0.32	.....
217, San Mateo	4.00	9.87	1878	0.98	1882	2.95	9.74	1878	0.19	1885	2.64	5.85	1879	0.52	1885
218, Crystal Springs	7.77	16.28	1878	2.39	1882	6.54	21.00	1878	0.56	1881	7.14	14.75	1879	1.34	1881
219, Menlo Park	2.52	4.97	1886	0.65	1882	1.92	4.92	1887	0.12	1885	2.21	4.27	1879	0.46	1887
220, Woodside	5.71	9.72	....	2.74	.....	2.74	7.36	1884	0.26	.....	4.78	10.90	1884	0.83	....
221, Pigeon Point	2.39	10.14	1878	0 88	.....	1.93	15.04	1878	0.50	....	2.12	4.65	1876	0.00	1879
222, Año Nuevo Island	3.05	9.07	1878	1.11	1883	2.40	10.46	1878	0.58	1877	3.13	7.28	1884	0.45	....
223, San Andres	9.06	23.11	1878	2.72	1882	8.15	27.87	1878	0.76	1875	6.73	19.82	1879	1.46	1881
224, Pilarcitos	1.02	24.46	1866	3.91	1873	8.77	25.28	1878	0.74	1875	7.86	19.71	1879	2.25	1881
225, Point Montara	3.87	10.86	1878	1.83	1883	2.41	10.49	1878	0.19	....	3.80	8.39	1884	0.66	....

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
187, Yerba Buena Island	2.18	5.27	1880	0.20	1877	0.45	2.54	1883	0.00	1873	0.27	2.26	1884	0.00	(2)
188, Presidio	1.84	7.55	1880	0.00	(1)	0.53	3.23	1860	0.00	(1)	0.18	1.93	1884	0.00	(1)
189, Farallon Islands	2.23	4.41	....	0.70	.....	0.74	4.04	.....	.....	.....	0.50	2.81	....	....	....
190, Point San José	1.08	.....	.....	.....	.....	0.38	.....	.....	.....	.....	0.09	.....	.....	.....	.....
191, Antioch	1.46	3.65	1880	0.25	1882	0.39	2.55	....	0.00	(1)	0.13	1.15	1884	0 00	(2)
192, Martinez	2.43	8.02	1880	0.96	1879	0.45	2.86	1883	0.00	(1)	0.22	2.00	1884	0.00	(2)
193, East Brother Island	0.74	2.03	1884	0.00	'76 '77	0.26	1.59	1883	0.00	'82 '84	0.11	0.30	1884	0.00	(2)
194, Brentwood	1.68	4.18	1880	0.39	1883	0.27	1.97	1883	0.00	(2)	0.23	1.51	1884	0.00	(2)
195, Clayton	1.36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
196, Mount Diablo	0.22	0.65	1876	0.00	1875	0.29	0.45	1877	0.00	1876	0.22	0.62	1875	0.00	1876
197, Byron	1.86	5.13	1880	0.17	1883	0.32	2.38	1883	0.00	(2)	0.22	1.54	1884	0.00	(2)
198, Camp Union	0.64	.....	.....	.....	.....	0.54	.....	.....	.....	.....	0.08	.....	.....	.....	.....
199, Farmington	2.77	7.31	1880	0.18	1881	0.64	3.06	1883	0 00	(1)	0.21	1.32	1884	0 00	(1)
200, Stockton	1.65	6.28	1880	0.00	(1)	0.55	4.84	1883	0.00	(1)	0.15	1.05	1884	0.00	(2)
201, Lathrop	1.82	5.16	1880	0.31	1885	0.57	3.62	1883	0.00	(1)	0.14	1.02	1884	0.00	(2)
202, Ellis and Tracy	0.97	3.02	1887	0.03	1871	0.24	1 82	1883	0.00	(1)	0.15	2.05	1884	0.00	(2)
203, Berkeley	2.53	.....	.....	.....	.....	0.06	.....	.....	.....	.....	.....	.....	.....	.....	.....
204, Oakland	2.38	8.46	1880	0.00	1875	0.67	3.50	1883	0.00	'85 '87	0.44	3.03	1884	0.00	(1)
205, Livermore	1.49	6.51	1880	0.00	1875	0.36	2.73	....	.....	.....	0.16	1.73	1884	0.00	(1)
206, Pleasanton	2.40	8.50	1880	1.00	1878	0.58	2.73	1883	0.00	1887	0.20	1.78	1884	0.00	(1)
207, Niles	1.69	5.87	1880	0.00	1882	0.59	2.99	1883	0 00	(2)	0.23	2 69	1884	0.00	(1)
208, Midway	0.39	0.78	1878	0.00	1879	0.06	0.12	1878	0.00	1879	0 00	0.00	.....	.....	.....
209, Calaveras Valley	5.33	7.74	1880	3.16	1883	1.85	3.46	1883	0.39	1884	0.40	1.45	1884	0.00	'80 '83
210, Marsh Ranch	1.15	.....	.....	.....	.....	0.56	.....	.....	.....	.....	.....	.....	.....	.....	.....
211, Langworth	2.84	4.78	....	1.08	.....	0.12	0.31	....	0.00	....	0.24	0.79	....	0.00	....
212, La Grange	1.87	4.90	1884	0.00	1877	0.65	2.90	1883	0.00	(2)	0.07	1.05	1884	0 00	(1)
213, Modesto	1.14	4.11	1880	0.08	1875	0.33	2.24	1883	0.00	(2)	0.11	0.99	1884	0.00	(1)
214, Grayson	1.22	4.66	1880	0.00	'75 '77	0.44	2.50	1883	0.00	(2)	0.17	1.90	1884	0.00	(1)
215, Thurlock	1.61	4.09	1880	0.40	1883	0.41	1.75	1883	0.00	(2)	0.25	1.93	1884	0.00	(1)
216, Hill's Ferry	1.55	2.77	1884	0.18	1883	0.70	2.56	1883	0.00	1881	0.27	1.64	1884	0.00	(1)
217, San Mateo	2.19	8.70	1880	0.00	'75 '77	0.47	2.92	1883	0.00	(2)	0.24	2.91	1884	0.00	(1)
218, Crystal Springs	4.07	17.19	1880	0.13	1877	1.36	4.19	1883	0.20	1878	0.51	3.95	1884	0.00	(1)
219, Menlo Park	2.23	6.44	1880	0.67	1882	0.45	2.49	1883	0.00	'81 '84	0.35	3.16	1884	0.00	(1)
220, Woodside	4.55	7.26	.....	0.23	.....	0.41	0.86	....	0.17	....	1.12	3.29	1884	0.00	....
221, Pigeon Point	3.31	10.00	.....	0.00	'77 '81	1.01	2.45	1883	0.00	1881	0.26	1.82	.....	0.00	(1)
222, Año Nuevo Island	3.41	8.77	1880	0.61	1876	0.94	4.00	1883	0.00	1878	0.40	2.42	1884	0.00	(1)
223, San Andres	3.81	17.81	1880	0.07	1875	1.31	4 74	1883	0.07	1872	0.37	3.03	1884	0.00	(1)
224, Pilarcitos	4.03	20.06	1880	0.11	1875	1.79	6 01	1883	0.09	1872	0.49	4.50	1884	0.00	(2)
225, Point Montara	3.37	8.24	1879	0.38	1877	1.02	3.84	1883	0.10	.....	0.45	2.83	1884	0.00	(2)

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
187, Yerba Buena Island	0.01	0.22	1877	0.00	(2)	(T)	0.03	.	0.00	(2)	0.23	1.03		0.00	....
188, Presidio	0.02	0.20	1886	0.00	(2)	0.00	0.04	1884	0.00	(2)	0.11	1.40	1887	0.00	(1)
189, Farallon Islands	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.18	0.35	.....	0.00	....
190, Point San José	(T)					0.00					0.03				
191, Antioch	(T)	(T)	1885	0.00	(2)	(T)	(T)	1884	0.00	(2)	0.07	0.41	1887	0.00	(1)
192, Martinez	0.01	0.07	1886	0.00	(2)	0.00	0.00	.....	0.00	.....	0.11	0.56	1883	0.00	(2)
193, East Brother Island	0.00	0.00	. .	0.00	.....	0.00	0.00	.....	0.00	.....	0.04	0.30	1883	0.00	(2)
194, Brentwood	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.06	0.50	1887	0.00	(2)
195, Clayton†															
196, Mount Diablo	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....
197, Byron	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	(T)	0.02	1882	0.00	(2)
198, Camp Union	0.45					0.00									
199, Farmington	0.00	0.00	.	0.00	.....	(T)	(T)	.....	0.00	(2)	0.16	0.76	1883	0.00	(1)
200, Stockton	0.01	0.10	1856	0.00	(2)	0.00	0.00	.....	0.00	.....	0.05	0.50	1882	0.00	(2)
201, Lathrop	(T)	0.02	1885	0.00	(2)	0.00	0.00	. . .	0.00	.....	0.08	0.53	1882	0.00	(2)
202, Ellis and Tracy	(T)	0.05	1876	0.00	(2)	0.01	0.10	1884	0.00	(2)	0.01	0.20	'82 '83	0.00	(2)
203, Berkeley†															
204, Oakland	0.03	0.18	1877	0.00	(2)	0.02	0.25	1884	0.00	(2)	0.22	1.00	1882	0.00	(2)
205, Livermore	(T)	0.04	.....	0.00	(2)	0.01	0.10	1884	0.00	(2)	0.12	0.80	1887	0.00	(2)
206, Pleasanton	(T)	0.04	1882	0.00	(2)	0.01	0.09	1884	0.00	(2)	0.08	0.35	1883	0.00	(2)
207, Niles	0.00	0.00	.....	0.00	.....	0.00	0.00	....	0.00	....	0.10	0.71	1883	0.00	(2)
208, Midway	0.00	0.00	.....	0.00	(2)	0.00	0.00	....	0.00	.....	0.00	0.00	....	0.00	....
209, Calaveras Valley	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	....	0.26	0.46	1882	0.00	1879
210, Marsh Ranch†															
211, Langworth	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.16	0.50	.....	0.00	....
212, La Grange	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.16	2.35	1879	0.00	(1)
213, Modesto	0.01	0.15	1876	0.00	(2)	0.00	0.00	.....	0.00	....	0.09	0.75	1874	0.00	(2)
214, Grayson	0.00	0.00	.....	0.00	.....	0.00	0.00	....	0.00	.....	0.01	0.08	1883	0.00	(2)
215, Thurlock	0.00	0.00	.....	0.00	....	0.00	0.00	.....	0.00	.....	0.13	1.00	1887	0.00	(2)
216, Hill's Ferry	0.00	0.00	. .	0.00	.....	0.00	0.00	....	0.00	.....	0.13	0.63	1883	0.00	(1)
217, San Mateo	(T)	0.07	1886	0.00	(2)	0.00	0.00	.....	0.00	.....	0.12	0.48	1878	0.00	(1)
218, Crystal Springs	0.03	0.25	1881	0.00	(2)	0.00	0.00	....	0.00	.....	0.29	1.41	1878	0.00	(2)
219, Menlo Park	0.02	0.24	1886	0.00	(2)	(T)	0.05	1884	0.00	(2)	0.05	0.22	1887	0.00	(2)
220, Woodside	0.00	0.00	.....	0.00	.....	0.02	0.05	1884	0.00	....	0.16	0.25	.....	0.07	...
221, Pigeon Point	0.01	0.07	1882	0.00	(2)	0.00	0.00	.....	0.00	....	0.18	0.43	1882	0.00	(2)
222, Año Nuevo Island	0.00	0.00	....	0.00	(2)	0.00	0.00	....	0.00	.....	0.25	0.62	1883	0.00	(1)
223, San Andres	0.01	0.08	1881	0.00	(2)	0.00	0.00	....	0.00	...	0.28	1.39	1878	0.00	(1)
224, Pilarcitos	0.03	0.28	'73 '77	0.00	(2)	(T)	0.07	1876	0.00	(2)	0.39	1.70	1883	0.00	(1)
225, Point Montara	0.01	0.05	1877	0.00	(2)	0.00	0.00	....	0.00	.....	0.29	0.73	1878	0.00	(1)

Name and number of station.	October.					November				December.				Year.			
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	Average.	Maximum.		Minimum.	Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
187, Yerba Buena Isl'd	0.88	2.13	1882	0.00	1878	1.82	7.05	.....	0.00	.....	3.40	9.79	1880	0.00	1876	16.15	27.30	77-78*	6.13	76-77*
188, Presidio	0.60	2.37	1876	0.00	(1)	2.09	8.74	1885	0.17	1876	4.26	12.07	1852	0.00	1876	19.13	34.84	67-68*	8.08	76-77*
189, Farallon Islands	1.06	2.44	.....	0.00	.....	2.52	11.12	.....	0.00	.....	3.54	8.11	.....	0.94	.....	18.18	26.15	.....	10.54	.....
190, Point San José	0.58					1.91					3.07					14.37				
191, Antioch	0.42	1.25	1884	0.00	(1)	1.29	4.87	1885	0.00	1880	1.10	2.89	1884	0.00	1880	9.73	18.35	83-84*	5.69	80-81*
192, Martinez	0.53	1.53	1882	0.00	(1)	1.44	8.08	1885	0.00	'77 '84	2.65	8.84	1880	0.00	1877	16.02	23.35	83-84*	10.23	84-85*
193, East Brother Isl'd	0.30	1.20	1882	0.00	'75 '80	1.45	5.13	.....	0.00	1875	1.01	3.00	1880	0.00	1876	7.47	11.36	77-78*	4.56	81-82*
194, Brentwood	0.32	1.20	1884	0.00	(1)	1.21	6.40	1885	0.00	1884	1.75	5.18	1880	0.28	1882	10.76	16.76	.....	6.77	.....
195, Clayton†																				
196, Mount Diablo	0.57	2.95	1876	0.18	1875	4.73	9.19	1875	0.27	1876	1.06	3.11	1875	0.00	1876	16.27	23.76	75-76*	11.40	76-77*
197, Byron	0.49	1.23	1884	0.00	(1)	1.31	6.70	1885	0.00	'84 '86	2.28	7.56	1880	0.32	1882	12.02	18.25	83-84*	7.34	84-85*
198, Camp Union†																				
199, Farmington	0.68	2.23	1882	0.00	(1)	1.21	6.95	1885	0.00	'76 '84	2.15	6.21	1884	0.00	1876	13.69	23.34	83-84*	2.44	76-77*
200, Stockton	0.50	2.11	1876	0.00	(1)	1.11	5.86	1875	0.00	1884	2.62	11.49	1871	0.00	1876	13.91	32.04	53-54*	6.87	70-71*
201, Lathrop	0.28	1.46	1882	0.00	(1)	1.19	6.46	1885	0.00	1884	1.65	5.79	1880	0.37	1882	11.19	16.35	83-84*	5.41	84-85*
202, Ellis and Tracy	0.28	0.85	1876	0.00	(1)	1.01	5.60	1885	0.00	'70 '84	1.87	9.50	1871	0.00	'70 '76	8.84	14.68	71-72*	2.91	70-71*
203, Berkeley	....										3.93									
204, Oakland	1.35	4.74	1876	0.00	1887	2.73	9.73	18-5	0.00	1884	3.71	12.57	1880	0.00	1876	23.07	32.72	77-78*	12.29	76-77*
205, Livermore	0.51	1.67	1874	0.00	(1)	1.43	7.22	1875	0.00	1870	2.62	11.69	1871	0.00	1876	13.81	22.75	83-84	6.01	76-77*
206, Pleasanton	0.73	2.39	1882	0.00	'80 '87	1.58	7.38	1885	0.00	1884	2.85	10.61	1880	0 07	1878	17.49	23.98	81-81*	9.81	84-85*
207, Niles	0.73	2.75	1876	0.00	(1)	2.06	8.83	1875	0.00	'70 '84	3.23	11.91	1871	0.00	1876	16.88	26.25	83-84*	7.45	70-71*
208, Midway	0.20	0.23	1878	0.16	1877	0.29	0.48	1877	0.10	1878	0.55	0.69	1877	0.41	1878	6.62	10.95	77-78*	2.24	78-79*
209, Calaveras Valley	1.42	1.88	1882	0.72	1878	1.68	2.99	1879	0.37	1878	2.35	5.33	1879	0.43	1878	26 83	37.30	83-84*	21.40	82-83*
210, Marsh Ranch	....					2.67					9.67									
211, Langworth	0.79	1.74	....	0.00	....	2.30	8.42	.....	0.00	...	2.55	6.07	. . .	1.10	....	15.52	22.75	.....	9.47	
212, La Grange	0.85	3.52	1874	0.00	(1)	2.05	10.58	1875	0.12	1872	2.80	7.91		0.00	1876	16.54	25.87	75-76*	5.74	76-77*
213, Modesto	0 40	1.39	1883	0.00	(1)	1.06	5.98	1875	0.00	(1)	1.54	4.76	1871	0.00	(1)	8.89	13.54	75-76*	2.25	70-71*
214, Grayson	0.47	2.17	1874	0.00	(1)	1.22	5.95	1875	0.00	1876	2.70	15.11	1871	0.00	1876	11.83	23.51	71-72*	4.05	76-77*
215, Thurlock	0.46	1.31	1883	0.00	(1)	1.17	6.63	1885	0.00	'78 '84	1.04	3.30	1880	0.00	'78 '82	8.87	15.09	85-86*	4.28	78-79*
216 Hill's Ferry	0.35	0.82	....	0.00	1880	1.78	6.70	....	0.09	1883	1.89	4.65	1880	0.70	1883	11.81	19.20	81-81*	7.54	.....
217, San Mateo	0.92	2.46	1874	0.00	(1)	1.92	7.85	1875	0.00	'73 '76	2.95	11.30	1880	0.00	1876	18.40	27.19	77-78*	7.34	76-77*
218, Crystal Springs	1.95	6.32	1876	0.00	1880	3.19	12.29	1875	0.00	1880	5.29	18.56	1880	0.00	1876	34 14	55.59	77-78*	17 15	76-77*
219, Menlo Park	0.43	1.25	1882	0.00	'80 '87	1.31	6.22	1885	0 27	1884	2.80	8.93	1880	0.25	1878	14.29	20.25	81-81*	9.72	81-82*
220, Woodside	1.27	2.42	. .	0.12	....	5.90	11.46	.....	0.33	.....	9.47	14.23	.....	4.71	....	36.13	37.40	.	21.59	...
221, Pigeon Point	0.80	2.34	....	0.00	'75 '80	1.79	5.04	1875	0.00	1876	3.17	6.64	1880	0.00	1876	16.97	37.28	77-78*	9.15	76-77*
222, Año Nuevo Isl'd.	1.06	2.37	1878	0.01	1875	2.32	12.39	1875	0.10	1876	5.19	13.10	.....	0.00	1876	22 24	31.91	75-76*	9.88	76-77*
223, San Andres	1.88	7.73	1876	0.01	1880	4.11	17.30	1875	0.33	1876	10.34	51.05	1871	0.00	1876	46.05	70.32	75-76*	21.95	76-77*
224, Pilarcitos	2.01	6.85	1876	0.00	'64 '66	6.09	16.94	1875	0.54	1876	12.35	41.87	1871	0.00	1876	54.83	81.79	67-68*	23.07	76-77*
225, Point Montara	1.10	2.77	1876	0.00	1880	3.29	10.98	.....	0.27	1880	4.79	10.09	.....	0.00	1876	24.40	33.57	77-78*	8.62	76-77*

† No data. * Seasonal rain-fall, September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
226, Mount Hamilton	3.68	5.60	1884	2.00	1883	6.06	11.56	1884	3.10	1882	6.05	13.95	1884	0.75	1882
227, Murphy's	7.50	..	.....	..	.....	6.31	.....	.....	.....	.....	7.99	.....	.....	.....	.....
228, Wright's	7.91	.....	.....	.....	.....	4.48	.....	.....	.....	.....	2.60	.....	.....	.....	.....
229, San José	2.70	5.53	1878	0.68	1887	2.49	6.94	1878	0.18	1885	1.47	6.23	1884	0.59	1875
230, Santa Clara	2.05	4.10	.....	0.55	...	1.70	3.99	.....	0.25	.....	2.97	5.80	..	0.65	....
231, Los Gatos	6.41	.....	.....	.....	.....	5.60	.....	.....	.....	.....	1.68	.....	.....	.....	.....
232, Tennant	2.99	6.76	1881	0.00	1878	3.63	10.75	1878	0.00	1885	4.01	10.09	1884	1.28	1881
233, Gilroy	5.07	8.98	1878	0.90	1887	2.95	11.48	1878	0.00	1877	2.76	7.24	1884	0.28	1886
234, Livingston	1.72	3.06	1886	0.37	1887	1.22	2.41	1887	0.03	1886	1.13	1.83	1886	0.43	1887
235, Central Point	1.52	3.61	....	0.78	1880	1.05	3.10	1884	0.00	...	1.85	3.56	1884	0.66	....
236, Merced	2.65	10.30	1886	0.13	1887	1.41	4.39	1884	0.00	'73 '85	1.44	5.38	1884	0.00	1873
237, Athlone	1.62	2.87	1886	0.38	1887	1.81	3.52	1887	0.11	1886	1.50	2.78	1886	0.23	1887
238, Los Banos	1.61	.....	.....	.....	.....	1.08	.....	.....	.....	.....	1.20	.....	.....	.....	.....
239, Aptos	3.81	7.61	1886	0.95	1887	3.27	8.82	1887	0.19	1885	1.76	4.09	1886	0.43	1885
240, Santa Cruz	6.18	16.87	1875	1.01	1887	3.98	14.71	1878	0.41	1885	3.18	8.76	1884	0.47	1885
241, Loma Prieta	4.03	.....	.....	.....	.....	8.08	.....	.....	.....	.....	11.72	.....	.....	.....	.....
242, Watsonville	4.85	.....	.....	.....	.....	4.74	.....	.....	.....	.....	2.14	.....	.....	.....	.....
243, Soquel	(T)	.....	.....	.....	.....	(T)	.....	.....	.....	.....	(T)	.....	.....	.....	.....
244, Buchanan	2.60	6.11	1881	1.24	1879	3.12	4.25	1880	1.75	1879	3.00	5.41	1882	1.49	1880
245, Fort Miller	1.65	2.60	1858	0.29	1859	1.76	4.53	1857	0.17	1858	4.29	15.59	1852	0.29	1857
246, Hamptonville	1.71	2.50	1879	0.92	1880	3.18	4.86	1880	1.50	1879	2.29	3.52	1879	1.05	1880
247, Borden	1.47	3.98	1886	0.25	1887	1.40	4.48	1884	0.00	'76 '85	1.26	3.29	1884	0.50	1877
248, Big Dry Creek	3.84	6.62	1875	1.35	1873	3.36	8.09	1878	0.00	1877	3.17	6.64	1874	0.36	1875
249, Firebaugh Ferry	1.78	4.34	.....	0.27	...	1.14	3.20	1884	0.00	.....	1.12	3.00	.....	0.29	....
250, Fresno	1.30	3.20	1878	0.00	1883	1.21	3.18	1884	0.00	1885	1.21	2.81	1881	0.09	1887
251, King's River (Centerville)	2.42	4.86	1884	0.92	1883	3.00	8.39	1884	0.53	1883	2.97	6.90	1884	0.88	1880
252, Kingsburgh	0.98	2.47	1884	0.00	'79 '83	1.35	4.09	1884	0.00	1885	1.21	4.09	1884	0.13	1887
253, New Idria	2.18	6.81	1884	0.00	....	2.43	6.28	1884	0.00	.....	5.56	9.58	1882	1.47	....
254, Selma	1.64	1.97	1886	0.31	1887	1.60	2.84	1887	0.36	1886	0.48	0.96	1886	0.00	1887
255, Hollister	2.42	5.98	1876	0.57	1887	1.83	6.61	1878	0.16	1875	1.67	4.38	1884	0.35	1885
256, San Benito	4.91	.....	.....	.....	.....	1.88	.....	.....	.....	.....	0.36	.....	.....	.....	.....
257, Pajaro	4.13	10.27	1878	1.41	1882	2.91	10.26	1878	0.15	1885	2.65	5.83	1884	0.22	1885
258, Salinas	3.03	7.06	1878	0.78	1887	2.34	8.58	1878	0.00	'77 '85	2.00	4.69	1884	0.19	1885
259, Monterey	2.13	3.09	1886	0.35	1887	2.18	4.92	1887	0.09	1885	3.03	6.12	1852	0.40	1885
260, Chualar	2.70	2.80	1886	0.54	1885	2.42	2.50	1887	0.00	1885	2.13	5.17	1884	0.32	1885
261, Soledad	2.03	5.26	1876	0.34	1887	1.68	4.63	1878	0.00	1885	1.58	4.65	1882	0.28	1877
262, Jolon	3.68	.....	.....	.....	.....	3.56	.....	.....	.....	.....	3.36	.....	.....	.....	.....
263, Gonzales	1.73	.....	.....	.....	.....	1.78	.....	.....	.....	.....	1.70	.....	.....	.....	.....
264, Kings City	0.38	.....	.....	.....	.....	5.08	.....	.....	.....	.....	0.18	.....	.....	.....	.....

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
226, Mount Hamilton	4.54	11.96	1884	0.98	1881	2.34	7.56	1883	0.09	1881	1.31	3.85	1884	0.00	1883
227, Murphy's	2.90	.....	.....	.....	.....	2.13	.....	.....	.....	.....	0.00	.....	.....	.....	.....
228, Wright's	11.32	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.00	.....	.....	.....	.....
229, San José	1.97	8.70	1880	0.00	'75 '77	0.41	2.18	1883	0.00	(2)	0.20	2.15	1884	0.00	(2)
230, Santa Clara	1.50	2.90	.....	0.60	.....	0.52	2.87	.....	0.00	.....	0.39	1.65	.....	0.00	....
231, Los Gatos	3.59	.....	.....	.....	.....	0.15	.....	.....	.....	.....	(T)	.....	.....	.....	.....
232, Tennant	3.03	10.84	1880	0.37	1881	0.93	3.38	1883	0.00	'70 '81	0.21	1.42	1884	0.00	(2)
233, Gilroy	2.05	9.48	1880	0.00	1875	0.40	2.23	1883	0.00	(2)	0.13	1.24	1884	0.00	(2)
234, Livingston	2.13	2.80	1886	1.46	1887	0.00	0.00	.....	0.00	.....	0.00	0.00	...	0.00	....
235, Central Point	1.29	2.96	1880	0.40	1882	0.48	1.86	.....	0.00	'81 '87	0.20	1.40	1884	0.00	(1)
236, Merced	1.78	8.41	1886	0.00	'73 '77	0.54	2.32	1886	0.00	(2)	0.19	1.73	1884	0.00	(1)
237, Athlone	2.40	3.18	1886	1.62	1887	0.00	0.00	.....	0.00	.....	0.12	0.23	1887	0.10	1886
238, Los Banos	0.77	.....	.....	.....	.....	0.28	.....	.....	.....	.....	0.13	.....	.....	.....	.....
239, Aptos	3.50	7.10	1886	1.61	1887	0.20	0.27	1886	0.13	1885	0.00	0.00	...	0.00	....
240, Santa Cruz	3.03	7.60	1886	0.10	1875	0.51	3.18	1883	0.00	'78 '81	0.34	2.48	1884	0.00	(2)
241, Loma Prieta	6.19	.....	.....	.....	.....	0.16	.....	.....	.....	.....	.....	.....	.....	.....	.....
242, Watsonville	1.76	.....	.....	.....	.....	0.59	.....	.....	.....	.....	0.00	.....	.....	.....	.....
243, Soquel	(T)	.....	.....	.....	.....	(T)	.....	.....	.....	.....	(T)	(T)	1885	0.00	1886
244, Buchanan	4.33	8.93	1880	1.89	1881	0.09	0.34	1879	0.00	'80 '82	0.14	0.55	1881	0.00	(1)
245, Fort Miller	1.91	4.44	1855	0.00	1857	1.05	4.79	1853	0.00	'57 '58	(T)	0.01	1854	0.00	(1)
246, Hamptonville	3.42	4.57	1880	2.27	1879	0.70	1.00	1880	0.40	1879	0.10	0.20	1879	0.00	1880
247, Borden	1.41	3.20	1880	0.00	1877	0.37	1.17	1884	0.00	(2)	0.16	1.73	1884	0.00	(1)
248, Big Dry Creek	0.45	1.73	1874	0.00	(2)	0.22	0.40	1877	0.00	'73 '76	0.11	0.72	1875	0.00	(1)
249, Firebaugh Ferry	0.94	2.47	.....	0.04	...	0.16	0.67	1884	0.00	.....	0.17	1.41	1884	0.00	(2)
250, Fresno	1.64	2.85	1884	0.78	1878	0.30	1.36	1883	0.00	'78 '86	0.13	1.29	1884	0.00	(1)
251, King's River (Centerville)	2.77	5.23	1884	1.12	1881	0.81	2.53	1884	0.00	'79 '80	0.31	1.73	1884	0.00	(2)
252, Kingsburgh	1.66	3.05	1880	0.62	1881	0.39	1.53	1883	0.00	(2)	0.11	0.92	1884	0.00	(1)
253, New Idria	3.54	5.05	....	0.67	1882	0.76	2.85	1884	0.00	...	0.85	3.05	1884	0.00	....
254, Selma	2.29	2.60	1887	1.98	1886	0.29	0.58	1887	0.00	1886	0.00	0.00	.....	0.00	....
255, Hollister	1.25	3.47	1880	0.00	1875	0.33	1.54	1883	0.00	(2)	0.19	1.85	1884	0.00	(2)
256, San Benito	0.37	.....	.....	.....	.....	0.48	.....	.....	.....	.....	0.17	.....	.....	.....	.....
257, Pajaro	1.85	6.00	1880	0.03	1875	0.43	3.29	1883	0.00	(2)	0.20	1.47	1884	0.00	(1)
258, Salinas	1.33	4.03	1886	0.00	(2)	0.33	2.03	1883	0.00	(2)	0.20	2.54	1884	0.00	(1)
259, Monterey	1.81	5.31	1880	0.33	1850	0.41	2.50	1848	0.00	(2)	0.22	1.89	1884	0.00	(2)
260, Chualar	1.42	2.73	1884	0.00	.....	0.36	1.31	1883	0.03	1887	0.18	1.78	1884	0.00	(1)
261, Soledad	0.78	2.19	1880	0.00	1876	0.24	1.26	1883	0.00	(1)	0.12	1.56	1884	0.00	(1)
262, Jolon	2.27	.....	.....	.....	.....	0.67	.....	.....	.....	.....	0.15	.....	.....	.....	.....
263, Gonzales	1.16	.....	.....	.....	.....	0.30	.....	.....	.....	.....	0.16	.....	.....	.....	.....
264, Kings City	0.58	.....	.....	.....	.....	0.02	.....	.....	.....	.....	0.09	.....	.....	.....	.....

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
226, Mount Hamilton	0.00	0.00	.....	0.00	.....	0.04	0.15	1884	0.00	(2)	0.25	0.65	1883	0.00	1882
227, Murphy's	0.00	.....		.....		.....	.....		.....		0.00	.....		.....	
228, Wright's	0.00	.....		.....		0.00	.....		.....		0.00	.....		.....	
229, San José	(T)	0.03	1886	0.00	(2)	0.00	0.00	.....	0.00	.....	0.10	0.61	1887	0.00	(1)
230, Santa Clara	0.00	0.00	.....	0.00	.....	0.01	0.05	.....	0.00	.....	0.03	0.12	.....	0.00	.....
231, Los Gatos	0.02	.....		.....		0.00	.....		.....		0.03	.....		.....	
232, Tennant	0.00	0.00	.....	0.00	.....	0.03	0.22	1884	0.00	(2)	0.09	0.37	1883	0.00	(1)
233, Gilroy	(T)	0.05	1885	0.00	(2)	0.01	0.11	1884	0.00	(2)	0.20	1.46	1882	0.00	(2)
234, Livingston	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.08	0.17	1887	0.00	1886
235, Central Point	(T)	(T)	.....	0.00	(2)	(T)	(T)	.....	0.00	(2)	0.08	0.54	1882	0.00	(2)
236, Merced	0.01	0.17	1876	0.00	(2)	0.00	0.00	.....	0.00	.....	0.10	0.53	1882	0.00	(2)
237, Athlone	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.29	0.58	1887	0.00	1886
238, Los Banos	0.02	.....		.....		(T)	.....		.....		0.04	.....		.....	
239, Aptos	0.04	0.18	1885	0.00	(2)	0.00	0.00	.....	0.00	.....	0.18	0.47	1887	0.00	1886
240, Santa Cruz	0.01	0.08	1885	0.00	(2)	0.01	0.10	1884	0.00	(2)	0.32	1.27	1878	0.00	(2)
241, Loma Prieta†	.....	.....		.....		.....	.....		.....		.....	.....		.....	
242, Watsonville	0.00	.....		.....		0.00	.....		.....		0.10	.....		.....	
243, Soquel	0.00	0.00	.....	0.00	.....	0.00	.....		.....		0.00	.....		.....	
244, Buchanan	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.89	3.57	1881	0.00	(2)
245, Fort Miller	(T)	0.01	1853	0.00	(2)	0.00	0.00	.....	0.00	.....	0.03	0.12	1854	0.00	(2)
246, Hamptonville	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.00	.....		.....	
247, Borden	0.02	0.22	1876	0.00	(2)	0.00	0.00	.....	0.00	.....	0.04	0.46	1887	0.00	(2)
248, Big Dry Creek	0.05	0.35	1876	0.00	(2)	0.00	0.00	.....	0.00	.....	0.02	0.20	1874	0.00	(2)
249, Firebaugh Ferry	(T)	(T)	.....	0.00	(2)	(T)	(T)	.....	0.00	(2)	0.07	0.65	.....	0.00	(2)
250, Fresno	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.12	0.52	1887	0.00	(2)
251, King's River (Centerville)	0.00	0.00	.....	0.00	.....	(T)	(T)	1884	0.00	(2)	0.06	0.20	1882	0.00	(2)
252, Kingsburgh	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.08	0.53	1887	0.00	(2)
253, New Idria	0.01	0.03	1882	0.00	(2)	0.00	0.00	.....	0.00	.....	0.08	0.33	1882	0.00	'79 '80
254, Selma	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.00	.....		.....	
255, Hollister	0.02	0.22	1885	0.00	(2)	(T)	0.05	1884	0.00	(2)	0.09	0.45	1882	0.00	(2)
256, San Benito†	.....	.....		.....		.....	.....		.....		.....	.....		.....	
257, Pajaro	0.01	0.13	1885	0.00	(2)	0.01	0.15	1884	0.00	(2)	0.13	0.58	1887	0.00	(2)
258, Salinas	0.01	0.09	1885	0.00	(2)	0.00	0.00	.....	0.00	.....	0.10	0.68	1887	0.00	(2)
259, Monterey	0.04	0.50	1848	0.00	(2)	0.01	0.07	1884	0.00	(2)	0.06	0.25	1887	0.00	(2)
260, Chualar	0.01	0.07	1885	0.00	(2)	0.00	0.00	.....	0.00	.....	0.03	0.22	1883	0.00	(2)
261, Soledad	(T)	0.02	1886	0.00	(2)	0.01	0.10	1884	0.00	(2)	0.02	0.16	1887	0.00	(2)
262, Jolon	0.00	.....		.....		0.06	.....		.....		0.10	.....		.....	
263, Gonzales	0.00	.....		.....		0.00	.....		.....		0.03	.....		.....	
264, Kings City	0.00	.....		.....		0.00	.....		.....		0.06	.....		.....	

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
226, Mount Hamilton	3.03	6.16	1882	0.33	1881	1.87	3.45	1882	0.70	1881	4.57	9.72	1881	1.93	1882	33.74	55.09	83–84*	23.31	81–82*
227, Murphy's	0.12	.....		.....		.....	.....		.....		5.20	.....		.....		.....	.....		.....	
228, Wright's	1.32	.....		.....		8.45	.....		.....		4.74	.....		.....		40.82	.....		.....	
229, San José	0.53	1.81	1874	0.00	(1)	1.16	7.39	1885	0.00	'73 '75	1.78	5.60	1880	0.00	1876	13.81	21.17	79–80*	4.99	76–77*
230, Santa Clara	0.59	1.88	.....	0.00	.....	1.62	7.58	.....	0.05	.....	2.55	6.40	.....	0.40	.....	13.93	20.37	.....	10.42	.....
231, Los Gatos	0.49	.....		.....		6.99	.....		.....		4.00	.....		.....		28.96	.....		.....	
232, Tennant	0.62	1.76	1884	0.00	(1)	0.74	1.90	1882	0.00	1877	3.96	14.43	1880	0.00	1877	20.24	29.95	83–84*	15.08	81–82*
233, Gilroy	0.86	3.55	1874	0.00	(1)	2.05	11.75	1875	0.00	1873	3.02	12.33	1880	0.00	1876	19.50	31.04	75–76*	6.53	76–77*
234, Livingston	0.08	0.16	1886	0.00	1887	0.53	.....		.....		0.46	.....		.....		7.35	.....		.....	
235, Central Point	0.32	0.95	.....	0.00	.....	1.35	7.04	.....	0.05	1883	1.61	5.15	1880	0.29	1881	9.75	15.47	.....	4.97	81–82*
236, Merced	0.43	1.84	1874	0.00	(1)	1.24	5.83	1875	0.00	1872	1.96	5.34	1886	0.00	1876	11.75	30.83	85–86*	3.03	76–77*
237, Athlone	0.16	0.32	1886	0.00	1877	0.58	0.92	1886	0.23	1887	1.00	.....		.....		9.48	.....		.....	
238, Los Banos	0.21	.....		.....		1.46	.....		.....		0.74	.....		.....		7.54	.....		.....	
239, Aptos	0.58	1.55	1884	0.05	1887	3.15	10.65	1885	0.00	1884	5.57	11.34	1884	1.53	1886	22.06	.....		.....	
240, Santa Cruz	1.36	3.27	1874	0.00	'77 '80	2.53	13.81	1875	0.00	'76 '77	3.79	12.59	1880	0.19	1873	25.24	36.41	77–78*	16.48	84–85*
241, Loma Prieta†	.....	.....		.....		.....	.....		.....		.....	.....		.....		.....	.....		.....	
242, Watsonville	1.17	.....		.....		1.75	.....		.....		7.43	.....		.....		24.53	.....		.....	
243, Soquel	0.00	.....		.....		(T)	.....		.....		(T)	.....		.....		(T)	.....		.....	
244, Buchanan	0.46	1.19	1879	0.00	'78 '80	0.81	1.72	1879	0.00	1878	3.33	8.08	1880	0.00	1878	18.77	22.77	79–80*	8.70	78–79*
245, Fort Miller	0.28	1.03	1857	0.00	(1)	2.63	8.80	1852	0.00	1854	5.40	20.60	1852	0.57	1857	19.00	45.68	52–53*	8.88	54–55*
246, Hamptonville	2.23	.....		.....		1.09	.....		.....		4.24	.....		.....		18.96	.....		.....	
247, Borden	0.32	0.92	1882	0.00	'75 '85	1.14	8.69	1885	0.00	'75 '84	1.26	4.74	1884	0.00	1876	8.85	18.27	85–86*	2.57	76–77*
248, Big Dry Creek	0.67	2.36	1878	0.00	(1)	1.47	6.10	1875	0.00	(1)	3.23	8.52	1871	0.00	(1)	16.59	21.58	77–78*	4.78	76–77*
249, Firebaugh Fer'y	0.31	1.09	.....	0.00	.....	1.51	9.91	.....	0.00	.....	1.28	3.68	.....	0.00	.....	8.48	18.84	.....	2.24	.....
250, Fresno	0.39	2.00	1883	0.00	'77 '80	1.21	7.92	1885	0.00	1883	1.28	3.98	1884	0.16	1881	8.79	16.62	85–86*	4.87	78–79*
251, King's River	0.92	1.58	1879	0.23	1881	0.83	1.34	1882	0.37	1883	2.30	7.91	1880	0.26	1878	16.39	31.91	83–84*	11.03	81–82*
252, Kingsburgh	0.25	1.03	1879	0.00	(1)	0.86	6.22	1885	0.00	'78 '83	1.56	4.57	1880	0.00	'78 '81	8.45	15.85	83–84*	2.20	78–79*
253, New Idria	0.55	0.94	.....	0.00	.....	2.09	8.81	.....	0.00	.....	3.21	9.78	.....	0.57	1883	21.26	33.61	83–84*	11.44	.....
254, Selma	0.24	0.27	1886	0.20	1897	.....	.....		.....		0.60	.....		.....		.....	.....		.....	
255, Hollister	0.55	2.33	1874	0.00	(1)	1.32	7.68	1875	0.00	(1)	1.49	5.52	1880	0.00	'74 '76	11.16	18.12	77–78*	4.69	76–77*
256, San Benito	0.05	.....		.....		2.15	.....		.....		4.79	.....		.....		.....	.....		.....	
257, Pajaro	0.90	3.20	1882	0.00	(1)	1.80	7.91	1885	0.00	'73 '76	2.88	8.91	1880	0.00	(1)	17.90	28.01	77–78*	5.53	76–77*
258, Salinas	0.60	1.83	1874	0.00	(1)	1.21	6.37	1885	0.00	1876	2.09	6.80	1872	0.00	'74 '76	13.24	23.75	77–78*	3.90	76–77*
259, Monterey	0.57	1.81	1884	0.00	(1)	1.44	6.65	1885	0.30	1884	2.52	5.47	1880	0.00	1847	14.42	21.45	83–84*	9.16	86–87*
260, Chualar	0.64	2.08	1881	0.15	1886	1.47	6.90	1885	0.18	1883	1.54	2.79	1884	0.40	1886	12.90	.....		.....	
261, Soledad	0.26	1.78	1884	0.00	(1)	0.88	6.22	1885	0.00	(1)	1.06	3.14	1880	0.00	1874	8.66	16.36	83–84*	2.65	76–77*
262, Jolon	0.78	.....		.....		3.26	.....		.....		2.17	.....		.....		20.06	.....		.....	
263, Gonzales	0.47	.....		.....		1.04	.....		.....		1.66	.....		.....		10.03	.....		.....	
264, Kings City	0.10	0.14	1886	0.05	1887	0.34	0.36	1886	0.31	1885	0.03	.....		.....		6.86	.....		.....	

†No data. *Seasonal rain-fall, September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
265, San Ardo	0.58					5.58					0.17				
266, Kingsburgh	1.79	4.90	1884	0.18	1883	3.10	6.47	1884	0.72	1883	3.85	5.92	1884	2.12	1882
267, Visalia	1.25	3.25	1878	0.04	1883	1.55	3.98	1878	0.00	.....	1.15	2.48	1883	0.48	1880
268, Fort Babbitt	2.20					1.02									
269, Goshen	0.97	2.36	1881	0.00	1883	1.40	3.80	1884	0.00	1885	1.10	1.71	1884	0.20	1879
270, Hanford	1.71					1.62					1.81				
271, Lemoore	1.49	3.50	1884	0.00	1879	1.13	3.21	1884	0.00	1885	1.09	3.40	1884	0.10	1887
272, Tulare	1.29	4.75	1875	0.00	1883	1.23	2.97	1884	0.00	1885	0.93	2.64	1884	0.10	1877
273, Lewis Valley	1.46	2.71	1884	0.01	1883	1.90	9.04	1884	0.17	1879	1.23	3.54	1884	0.42	1879
274, Traver	1.18	1.90	1886	0.45	1887	1.76	3.05	1887	0.47	1886	0.69	1.06	1886	0.32	1887
275, Bishop Creek	0.09	1.03	1886	0.00	1885	0.53	1.20	1887	0.00	'85 '86	0.48	0.94	1884	0.00	1887
276, Camp Independence	1.22	5.46	1868	0.00	(1)	0.56	1.03	1867	0.00	(1)	0.52	4.76	1867	0.00	(2)
277, Keeler	0.25	0.49	1886	(T)	1887	0.54	0.93	1887	0.14	1886	0.24	0.60	1886	0.00	1887
278, San Miguel	0.52					5.96					0.12				
279, Paso Robles	0.51					6.14					0.34				
280, San Luis Obispo	4.68	12.10	1875	0.50	1883	3.75	11.91	1878	0.00	.....	2.81	12.41	1884	0.00	'71 '73
281, Port Harford	2.86					0.48					1.21				
282, Delano	0.74	1.85	1881	0.00	1883	1.22	2.97	1880	0.00	1885	0.85	1.98	1884	0.00	1887
283, Sumner	0.83	3.18	1875	0.00	1885	0.94	2.97	1880	0.00	1875	0.67	1.63	1877	0.00	1887
284, Caliente	1.36	3.81	1878	0.04	1883	1.99	4.98	1884	0.00	1885	1.52	5.00	1884	0.07	1887
285, Tehachapi	1.28	3.01	1880	0.10	1885	3.54	8.38	1887	0.14	1877	1.68	4.10	1886	0.19	1879
286, Keene	1.62	4.37	1878	0.17	1883	2.96	7.49	1878	0.04	1886	1.99	4.80	1884	0.65	1885
287, Mojave	0.59	1.77	1884	0.00	()	1.33	7.67	1884	0.00	(1)	0.40	2.17	1884	0.00	(1)
288, Fort Tejon	1.29	4.41	1856	0.22	1860	1.69	7.88	1856	0.00	1864	1.84	7.39	1858	0.00	1857
289, McClung Ranch	1.02	1.40	1882	0.81	1881	0.94	1.32	1882	0.48	1881	0.66	1.35	1881	0.30	1880
290, Camp Cady	0.27	0.55	1869	0.00	1870	0.50	1.00	1869	0.00	1870	0.56	1.00	1869	0.12	1870
291, Daggett	0.48					1.44					1.17				
292, Fenner	0.15					1.30					1.25				
293, Needles						1.86					2.08				
294, San Bernardino	3.66	7.20	.....	0.00	.....	3.03	12.20	.....	0.15	.....	1.97	9.98	.....	0.19	.....
295, Lugonia	1.56					3.48					3.59				
296, Ontario	2.15					6.07					2.71				
297, Colton	1.36	2.78	1886	0.21	1887	2.36	11.38	1884	0.00	'77 '85	1.42	4.05	1884	0.00	'85 '87
298, Rancho de Jurupa	0.95					1.51					3.12				
299, Riverside	1.12	2.86	.....	0.09	1883	1.97	7.74	.....	0.00	.....	1.93	6.36	.....	0.01	.....
300, San Gorgonio	4.15	9.31	1876	0.06	1887	4.24	10.49	1878	0.60	1875	2.99	6.26	1876	0.08	1887
301, Ring's Station	4.65	9.31	1876	1.78	1880	4.69	10.49	1878	1.86	1881	3.44	6.23	1876	0.55	1879
302, Arroyo Grande	2.40					0.77					1.05				
303, Santa Maria	0.98					3.46					0.98				

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
265, San Ardo	0.76					0.05					0.26				
266, Kingsburgh	2.54	3.67	1884	1.81	1883	0.89	1.90	1883	0.17	1882	0.40	1.19	1884	0.00	'82 '83
267, Visalia	1.62	3.82	1880	0.69	1878	0.30	0.82	1883	0.00	.....	0.02	0.06	1879	0.00	(2)
268, Fort Babbitt	0.00					0.00									
269, Goshen	1.39	2.85	1887	0.29	1876	0.36	1.10	1887	0.00	(1)	0.01	0.05	1879	0.00	(1)
270, Hanford	1.72					0.27					0.24				
271, Lemoore	1.50	3.35	1886	0.00	1881	0.26	1.03	1887	0.00	(1)	0.20	1.49	1884	0.00	(2)
272, Tulare	1.18	2.62	1880	0.00	1876	0.31	1.37	1883	0.00	(1)	0.10	1.02	1884	0.00	(2)
273, Lewis Valley	2.16	4.67	1880	0.38	1881	1.00	3.86	1884	0.08	1882	0.11	0.70	1884	0.00	(1)
274, Traver	2.14	2.27	1887	2.01	1886	0.00					0.07	0.14	1887	0.00	1886
275, Bishop Creek	0.23	0.38	1886	0.04	1885	0.14	0.55	1887	0.00	(2)	0.09	0.35	1887	0.00	(2)
276, Camp Independence	0.21	0.59	1877	0.00	(1)	0.27	0.76	1876	0.00	(1)	0.04	0.30	1871	0.00	(2)
277, Keeler	0.64	1.14	1887	0.20	1884	0.41	1.60	1884	0.00	'85 '86	0.22	0.80	1884	0.00	1886
278, San Miguel	1.40					0.24					0.26				
279, Paso Robles	1.10					0.44					0.00				
280, San Luis Obispo	2.05	8.78	1880	0.00	(1)	0.35	3.70	1883	0.00	(1)	0.14	2.26	1884	0.00	(2)
281, Fort Harford	1.84					0.00					0.00				
282, Delano	1.17	2.40	1880	0.00	1876	0.03	3.58	1883	0.00	(1)	0.02	0.22	1884	0.00	(2)
283, Sumner	1.09	2.40	1880	0.00	'75 '76	0.33	1.74	1884	0.00	(1)	0.10	0.80	1884	0.00	(2)
284, Caliente	2.30	3.53	1880	0.64	1881	0.81	4.83	1877	0.00	'82 '86	0.17	1.28	1884	0.00	(2)
285, Tehachapi	1.83	4.57	1886	0.50	1881	0.38	1.73	1883	0.00	(1)	0.13	1.05	1884	0.00	(2)
286, Keene	2.26	4.07	1880	0.72	1881	0.49	3.23	1884	0.00	(1)	0.22	1.79	1884	0.00	(2)
287, Mojave	0.25	0.76	1878	0.00	'77 '83	0.01	0.14	1885	0.00	(2)	(T)	0.02	1878	0.00	(2)
288, Fort Tejon	2.37	5.37	1858	0.00	1861	0.96	4.62	1856	0.00	1859	0.21	1.20	1858	0.00	(1)
289, McClung Ranch	1.05	1.61	1880	0.74	1882	0.20	0.43	1882	0.00	1881	0.02	0.07	1880	0.00	(2)
290, Camp Cady	0.25	0.50	1869	0.00	1870	0.05	0.16	1870	0.00	(2)	(T)	0.01	1869	0.00	(2)
291, Daggett	1.10					0.49					0.00				
292, Fenner	0.15					1.09					0.05				
293, Needles	0.10					0.75					0.00				
294, San Bernardino	1.75	5.68	.....	0.07	.....	0.44	3.17	.....	0.00	.....	0.06	0.59	.....	0.00	.....
295, Lugonia	2.82					1.04					0.48				
296, Ontario	2.50					0.40					0.42				
297, Colton	1.55	2.99	1878	0.28	1881	0.57	2.90	1884	0.00	(1)	0.08	0.50	1882	0.00	(2)
298, Rancho de Jurupa	0.33					1.14					0.00				
299, Riverside	1.16	2.15	.....	0.26	1883	0.43	1.79	.....	0.03	1881	0.12	0.52	.....	0.00	(2)
300, San Gorgonia	2.92	6.86	1878	0.99	1876	0.93	3.93	1877	0.00	(1)	0.04	0.26	1878	0.00	(2)
301, Ring's Station	2.82	6.86	1878	0.37	1875	0.79	3.93	1877	0.00	'75 '79	0.19	1.30	1882	0.00	(2)
302, Arroyo Grande	1.78					0.00					0.00				
303, Santa Maria	1.87					0.00					0.00				

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
265, San Ardo	0.00					0.00					0.14				
266, Kingsburgh	0.00	0.00		0.00		0.00	0.00		0.00		0.13	0.25	1883	0.00	1882
267, Visalia	(T)	(T)		0.00	(2)	(T)	0.03	1881	0.00	(2)	0.04	0.21	1882	0.00	(2)
268, Fort Babbitt†															
269, Goshen	0.00	0.00		0.00		0.00	0.00		0.00		0.12	0.57	1882	0.00	(2)
270, Hanford	0.00					0.01					0.04				
271, Lemoore	0.00	0.00		0.00		0.00	0.00		0.00		0.04	0.20	1881	0.00	(2)
272, Tulare	0.01	0.07	1877	0.00	(2)	0.00	0.00		0.00		0.02	0.29	1882	0.00	(2)
273, Lewis Valley	(T)	(T)		0.00	(2)	0.00	0.00		0.00		0.03	0.16	1882	0.00	(1)
274, Traver	0.00	0.00		0.00		0.00	0.00		0.00		0.13	0.26	1887	0.00	1886
275, Bishop Creek	0.00	0.00		0.00		0.00	0.00		0.00		0.10	0.40	1887	0.00	(1)
276, Camp Independence	0.10	0.35	1870	0.00	(1)	0.18	1.15	1867	0.00	(2)	0.07	0.40	1874	0.00	(2)
277, Keeler	0.17	0.52	1887	0.00	'84 '85	0.10	0.20	1884	0.00	1887	0.27	1.08	1887	0.00	(2)
278, San Miguel	0.00					0.00					0.58				
279, Paso Robles	0.00					0.00					0.00				
280, San Luis Obispo	(T)	0.02		0.00	(2)	(T)	(T)		0.00	(2)	0.03	0.40	1881	0.00	(2)
281, Port Harford	0.00					0.00					0.00				
282, Delano	0.00	0.00		0.00		0.00	0.00		0.00		0.01	0.05	1882	0.00	(2)
283, Sumner	(T)	0.05	1885	0.00	(2)	0.00	0.00		0.00		0.04	0.55	1887	0.00	(2)
284, Caliente	0.01	0.05	1885	0.00	(2)	0.00	0.00		0.00		0.02	0.13	1881	0.00	(2)
285, Tehachapi	0.01	0.05	1885	0.00	(2)	0.09	0.64	1881	0.00	(2)	0.03	0.32	1881	0.00	(2)
286, Keene	0.01	0.06	1885	0.00	(2)	(T)	0.02	1886	0.00	(2)	0.06	0.58	1881	0.00	(2)
287, Mojave	0.06	0.71	1885	0.00	(2)	0.00	0.00		0.00		0.03	0.29	1878	0.00	(2)
288, Fort Tejon	0.01	0.07	1857	0.00	(2)	0.16	0.35	1858	0.00	1855	2.02	8.58	1859	0.00	1857
289, McClung Ranch	0.00	0.00		0.00		0.00	0.00		0.00		0.01	0.04	1881	0.00	(1)
290, Camp Cady	0.34	0.69	1868	0.00	1869	0.65	1.00	1868	0.30	1869	0.00	0.00		0.00	
291, Daggett	0.00					0.00					0.00				
292, Fenner	0.00					0.00					0.03	0.06	1883	0.00	1884
293, Needles	0.00					0.00					0.06	1.12	1883	0.00	1884
294, San Bernardino	0.02	0.19		0.00		0.08	1.06		0.00		0.05	0.53		0.00	
295, Lugonia	0.00					0.00					0.00				
296, Ontario	0.00					0.00					0.00				
297, Colton	0.00	0.00		0.00		0.02	0.25	1884	0.00	(2)	0.00	0.00		0.00	
298, Rancho de Jurupa	0.00					0.09					0.00				
299, Riverside	0.00	0.00		0.00		0.60	3.00	1884	0.00	(2)	0.02	0.10	1881	0.00	(1)
300, San Gorgonia	0.08	0.30	1877	0.00	'75 '86	0.00	0.00		0.00		0.05	0.19	1876	0.00	(2)
301, Rings Station	0.16	0.94	1881	0.00	(1)	0.04	0.20	1878	0.00	(2)	0.08	0.43	1875	0.00	(2)
302, Arroyo Grande	0.00					0.00					0.00				
303, Santa Maria	0.00					0.00					0.00				

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
265, San Ardo	0.37					0.32														
266, Kingsburgh	0.94	1.19	1882	0.68	1883	0.64	1.12	1882	0.19	1883	0.30	0.66	1883	0.00	1882	14.58	24.53	83–84*	10.82	82–83*
267, Visalia	0.44	1.31	1882	0.00	1877	1.02	4.86		0.00		1.86	5.03	1880	0.15	1882	9.25	13.10		3.95	78–79*
268, Fort Babbitt	0.00					0.85					1.50									
269, Goshen	0.31	0.87	1879	0.00	1880	0.77	4.24	1885	0.00	'83 '84	1.44	4.29	1880	0.08	1882	7.87	10.62	85–86*	4.91	82–83*
270, Hanford	0.45					1.62					2.10					11.59				
271, Lemoore	0.25	0.83	1882	0.00	(1)	1.12	8.16	1885	0.00	'78 '83	1.41	6.04	1880	0.00	(1)	8.49	15.25	83–84*	1.07	78–79*
272, Tulare	0.16	0.72	1882	0.00	(1)	0.44	3.36	1885	0.00	(1)	0.97	4.50	1880	0.00	'75 '77	6.64	11.65	83–84*	2.07	78–79*
273, Lewis Valley	0.39	0.88	1882	0.00	1880	1.15	1.62	1879	0.00	1883	2.19	4.91	1880	0.00	1881	11.62	24.82	83–84*	6.35	82–83*
274, Traver	0.10																			
275, Bishop Creek	0.04	0.15	1887	0.00	'84 '86	0.02	0.05	1887	0.00	1884	0.30	1.00	1884	0.00	1885	2.02				
276, Camp Independence	0.32	1.10	1870	0.00	(1)	0.21	0.66	1875	0.00	(1)	2.27	12.19	1867			5.97	7.06	73–74*	1.63	72–73*
277, Keeler	0.27	0.80	1887	0.00	1884	0.18	0.65	1885	0.00	1884	0.38	0.70	1884	0.00	1886	3.67				
278, San Miguel	0.37					0.49					0.21					10.15				
279, Paso Robles	0.21					0.48	0.60	1887	0.37	1889	0.69					9.91				
280, San Luis Obispo	0.72	4.28	1874	0.00	(1)	1.95	12.90		0.00	(1)	4.53	13.93	1871	0.00	1876	21.01	42.40	83–84*	8.15	76–77*
281, Port Harford	0.00					13.62					4.12					24.13				
282, Delano	0.17	0.55	1882	0.00	(1)	0.49	2.49	1875	0.00	(1)	0.92	2.60	1880	0.00	(1)	6.22	11.52	83–84*	1.41	78–79*
283, Sumner	0.08	0.43	1879	0.00	(2)	0.52	2.14	1875	0.00	(1)	0.78	3.35	1884	0.00	(1)	5.38	9.10	83–84*	1.41	78–79*
284, Caliente	0.46	1.08	1879	0.00	(1)	0.80	3.58	1885	0.00	'76 '81	1.49	3.56	1880	0.00	'76 '83	10.93	18.15	83–84*	3.16	78–79*
285, Tehachapi	0.42	0.86	1887	0.00	'77 '85	0.73	3.70	1885	0.00	1876	1.52	5.67	1879	0.00	1876	11.64	18.77	83–84*	4.75	77–79*
286, Keene	0.68	2.55	1884	0.00	1877	0.92	3.73	1885	0.00	1878	1.90	5.22	1884	0.30	1881	13.11	24.25	83–84*	5.23	78–79*
287, Mojave	0.10	0.95	1877	0.00	(2)	0.37	1.42	1879	0.00	(1)	0.91	4.19	1879	0.00	(1)	4.05	9.96	83–84*	0.00	82–83*
288, Fort Tejon	1.00	2.62	1858	0.05	'55 '56	1.02	3.12	1856	0.00	1855	4.32	7.50	1855	0.00	1859	16.89	32.97	55–56*	11.97	56–57*
289, McClung Ranch	0.14	0.42	1881	0.00	(2)	0.11	0.27	1881	0.00	1879	1.49	2.22	1879	0.55	1881	5.61	6.25	79–80*	5.21	80–81*
290, Camp Cady	0.05	0.10	1869	0.01	1868	0.40	0.60	1869	0.20	1868	0.15	0.30	1868	0.00	1869	3.22				
291, Daggett	0.00					0.00					0.29					3.97				
292, Fenner	0.00					0.00					2.40					6.45				
293, Needles	0.00					0.00					1.32					6.17				
294, San Bernardino	0.43	1.82		0.00		1.58	7.50		0.05		3.10	8.80		0.00		16.17	37.51		8.98	
295, Lugonia	0.21					0.73					1.51					15.42				
296, Ontario	0.12					0.94					3.05					18.36				
297, Colton	0.25	0.84	1887	0.00	(1)	0.50	1.92	1885	0.00	'70 '83	1.20	3.93	1884	0.00	(1)	9.31	23.35	83–84*	5.43	82–83*
298, Rancho de Jurupa	0.00					1.67					4.77					13.58				
299, Riverside	0.27	0.97		0.00	(1)	0.37	1.34		0.00		1.38	2.56		0.20	1882	9.37	22.54		2.94	82–83*
300, San Gorgonia	0.45	1.30	1877	0.00	(1)	0.72	1.51	1887	0.00	1876	1.48	4.28	1877	0.00	1876	18.05				
301, Rings Station	0.53	1.30	'77 '81	0.00	1878	1.70	4.10	1879	0.00	1876	3.33	10.27	1880	0.00	1876	22.42	35.74	77–78*	12.00	74–75*
302, Arroyo Grande	0.00					12.38					4.13					22.51				
303, Santa Maria	0.03					4.68					2.31					14.31				

†No data. *Seasonal rain-fall, September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
304, Guadaloupe	1.65					2.25					1.42				
305, Los Alamos	1.48					0.28					2.61				
306, Point Conception	1.24	5.21	.....	0.00	....	3.81	12.95	....	0.00	.....	2.73	9.44	1884	0.35	....
307, Santa Barbara	3.87	14.84	1875	0.25	1870	3.88	11.73	1878	0.00	1877	1.90	9.77	1884	0.02	1871
308, Nordhoff	4.18					6.40					4.50				
309, San Buenaventura	3.86					3.57					2.37				
310, Los Angeles	3.93	17.22	1875	0.00	1872	3.76	10.74	1884	0.00	1875	1.90	9.85	1884	0.05	1873
311, Ravenna	1.61	5.30	1886	0.14	1887	2.68	9.50	1884	0.00	1885	2.11	6.06	1884	0.00	1887
312, Newhall	2.09	6.66	1884	0.00	1887	3.55	14.53	1884	0.00	'77'85	2.27	9.73	1884	0.00	1879
313, San Fernando	2.31	6.70	1886	0.21	1887	3.79	10.60	1884	(T)	1885	2.27	10.51	1884	(T)	1885
314, Cahuenga Valley	2.69	7.65	.....	0.84	....	5.08	10.24	....	(T)	.....	2.95	9.43	....	0.12	....
315, El Monte	6.93					4.16					2.60				
316, Spadra	2.80	9.60	1875	0.00	1885	2.81	8.80	1884	0.00	'77'83	1.77	7.00	1884	0.00	'85'87
317, Santa Monica	2.18	5.30	1886	0.20	1887	3.32	7.07	1887	1.10	1886	0.61	1.20	1886	0.26	1887
318, Downey	1.28					2.98					1.69				
319, Drum Barracks	2.58	5.10	1868	0.52	1870	1.26	2.05	1868	0.34	1867	2.24	7.85	1867	0.00	1865
320, Orange	6.80					1.83					1.18				
321, Anaheim Barracks	1.81	4.63	1886	0.30	1882	2.75	10.58	1884	0.00	1885	1.74	6.70	1884	0.00	'85'87
322, Alosta	4.06	10.05	.....	0.45	1883	6.19	21.97	1884	0.00	...	5.17	16.27	1884	0.32	....
323, Whitewater	0.64	1.40	1878	0.00	'81'82	1.21	5.96	1884	0.00	1881	1.04	3.05	1884	0.20	'80'82
324, Cabazon	0.15					0.12					0.00				
325, Indio	0.34	1.55	1882	0.00	(1)	0.61	3.16	1884	0.00	(1)	0.12	0.62	1884	0.00	(2)
326, Fall Brook	3.51					3.74					2.97				
327, San Luis Rey	3.18	6.04	1876	0.09	1851	3.53	7.90	1878	0.95	1851	2.00	3.12	1876	0.21	1851
328, Escondido	3.27	7.33	.....	0.45	....	3.23	9.83	....	0.60	.	2.54	8.66	...	(T)	....
329, Julian	5.67	10.04	1883	1.50	1880	7.94	20.63	1884	3.38	1882	9.85	15.63	1884	7.13	1882
330, Mammoth Tank	0.19	1.29	1882	0.00	(1)	0.43	1.38	1887	0.00	(1)	0.09	0.25	1886	0.00	(1)
331, Poway	2.65	6.40	1882	0.05	1887	2.33	9.40	1884	0.35	1885	2.06	6.96	1884	0.34	1885
332, Viejas	7.04					5.63					5.97				
333, Fort Yuma	0.34	1.74	1862	0.00	(1)	0.40	2.09	1859	0.00	(1)	0.18	0.90	1873	0.00	(2)
334, San Diego	1.55	6.95	.....	0.00	1850	2.22	9.05	1884	0.02	.....	1.38	6.23	1884	0.00	1857
335, Campo	2.36	3.10	1882	1.74	1881	2.80	5.45	1878	0.53	1881	2.38	5.00	1881	0.60	1879
336, Otay Mesa	2.32					2.46					1.73				
337, Oakwood	4.78	6.17	1876	3.41	1877	2.18	3.78	1876	0.59	1877	2.52	2.77	1876	2.28	1877
338, Paradise Valley	0.46					4.08									

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
304, Guadaloupe	2.61					0.00					0.00				
305, Los Alamos	2.06					0.23					0.00				
306, Point Conception	1.48	2.81	1880	0.00	(1)	0.11	0.40	1878	0.00	(1)	0.16	1.25	1884	0.00	(2)
307, Santa Barbara	1.61	5.73	1880	0.00	1873	0.33	2.79	1883	0.00	(1)	0.12	1.62	1884	0.00	(2)
308, Nordhoff	3.48					1.25					0.48				
309, San Buenaventura	1.48					0.38					0.27				
310, Los Angeles	1.34	5.06	1880	0.00	1873	0.35	2.36	1883	0.00	(1)	0.09	1.30	1884	0.00	(2)
311, Ravenna	1.38	2.70	1886	0.00	1883	0.09	0.20	1884	0.00	'81'86	0.27	1.65	1884	0.00	(1)
312, Newhall	1.82	4.27	1886	0.00	1883	0.48	2.28	1883	0.00	(1)	0.16	1.67	1884	0.00	(2)
313, San Fernando	2.00	3.48	1884	0.13	1883	0.43	2.12	1883	0.00	(1)	0.00	0.00	.....	0.00	....
314, Cahuenga Valley	2.18	3.35	.....	0.20	.....	0.97	3.12	.....	0.00	....	0.10	0.81	....	0.00	....
315, El Monte	0.90					0.20									
316, Spadra	1.31	4.17	1880	0.00	1875	0.32	1.40	1883	0.00	(1)	0.06	0.75	1884	0.00	(2)
317, Santa Monica	2.07	2.72	1880	0.58	1885	0.36	1.40	1887	0.00	'80'86	0.00	0.00	....	0.00	....
318, Downey	2.88					0.04					0.00				
319, Drum Barracks	0.37	1.25	1868	0.00	1870	0.02	0.09	1864	0.00	(2)	0.00	0.00	. .	0.00	....
320, Orange	1.55					0.33					0.00				
321, Anaheim Barracks	1.48	9.74	1880	0.06	1881	0.54	2.78	1883	0.00	(1)	0.13	1.28	1884	0.00	(2)
322, Alosta	3.10	6.55	1884	1.43	1883	0.78	2.32	1883	0.00	1881	0.42	2.54	1884	0.00	(2)
323, Whitewater	0.48	2.35	1878	0.00	(1)	0.00	0.01	1880	0.00	(2)	0.00	0.00	....	0.00	....
324, Cabazon	1.20					1.10					0.00				
325, Indio	0.10	0.44	1884	0.00	(2)	0.05	0.46	1884	0.00	(2)	0.00	0.00	.....	0.00	....
326, Fall Brook	2.24					0.53					0.11				
327, San Luis Rey	2.39	5.66	1887	0.38	1876	0.09	1.88	1877	0.00	1876	0.20	0.47	1878	0.00	1877
328, Escondido	1.84	5.66	.....	0.30	....	0.53	2.00	...	0.00	....	0.22	1.05	....	0.00	....
329, Julian	5.99	10.63	1884	2.75	1881	0.73	3.63	1884	0.00	(2)	0.00	0.00	....	0.00	....
330, Mammoth Tank	0.11	0.80	1881	0.00	(1)	0.02	0.19	1884	0.00	(2)	0.00	0.00	....	0.00	....
331, Poway	2.16	4.81	1884	0.90	1882	0.54	2.26	1884	0.00	1886	0.09	0.44	1884	0.00	(2)
332, Viejas	0.87										0.00				
333, Fort Yuma	0.10	1.00	1869	0.00	(2)	0.02	0.12	1877	0.00	(2)	(T)	0.05	'72'82	0.00	(2)
334, San Diego	0.90	2.91	1878	0.00	1857	0.44	2.17	1884	0.00	'50'58	0.07	0.68	1850	0.00	(1)
335, Campo	2.58	5.75	1878	1.08	1877	0.27	0.91	1877	0.00	'79'80	0.05	0.26	1882	0.00	(1)
336, Otay Mesa	1.86					0.69					0.08				
337, Oakwood	0.55					1.11					0.00	0.00	....	0.00	....
338, Paradise Valley	0.18														

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

CALIFORNIA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
304, Guadaloupe	0.05					0.00					0.00				
305, Los Alamos	0.00					0.00					0.00				
306, Point Conception	0.00	0.00	.....	0.00	.....	0.02	0.20	.....	0.00	(2)	(T)	0.02	1881	0.00	(2)
307, Santa Barbara	0.00	0.00	.....	0.00	.....	(T)	0.02	1872	0.00	(2)	0.04	0.44	1881	0.00	(2)
308, Nordhoff	0.00					0.00					0.00				
309, San Buenaventura	0.00					0.00					0.01				
310, Los Angeles	(T)	0.03	1887	0.00	(2)	0.08	1.06	1873	0.00	(2)	0.01	0.15	1887	0.00	(2)
311, Ravenna	0.02	0.17	1886	0.00	(2)	0.03	0.25	1884	0.00	(2)	0.10	0.60	1887	0.00	(2)
312, Newhall	(T)	0.02	1885	0.00	(2)	0.00	0.00	.....	0.00	.....	(T)	0.02	1887	0.00	(2)
313, San Fernando	0.02	0.19	1886	0.00	(2)	(T)	(T)	1886	0.00	(2)	0.00	0.00	.....	0.00	.....
314, Cahunga Valley	0.00	0.00	.....	0.00	...	0.04			0.00	.....	0.02	0.10	.....	0.00	.....
315, El Monte	0.00					0.50					0.00				
316, Spadra	(T)	0.01	1876	0.00	(2)	0.01	0.12	1885	0.00	(2)	0.01	0.06	1875	0.00	(2)
317, Santa Monica	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.08	0.30	1887	0.00	(2)
318, Downey	0.00					0.38					0.00				
319, Drum Barracks	0.05	0.25	1868	0.00	(2)	0.24	1.20	1867	0.00	(2)	0.00	0.00	.....	0.00	.....
320, Orange	0.00					0.07					0.00				
321, Anaheim Barracks	0.00	0.00	.....	0.00	.....	(T)	(T)	1886	0.00	(2)	(T)	(T)	1887	0.00	(2)
322, Alosta	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....
323, Whitewater	0.00	0.00	.....	0.00	.....	0.03	0.25	1880	0.00	(2)	0.00	0.00	.....	0.00	.....
324, Cabazon	0.00					0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....
325, Indio	0.00	0.00	.....	0.00	.....	(T)	(T)	1887	0.00	(2)	(T)	0.05	1887	0.00	(2)
326, Fall Brook	0.02					0.05					0.05				
327, San Luis Rey	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.01	0.03	1877	0.00	'50 '76
328, Escondido	0.00	0.00	.....	0.00	.....	0.02	0.20	.....	0.00	.....	0.25	2.50	.....	0.00	.....
329, Julian	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....	0.00	0.00	.....	0.00	.....
330, Mammoth Tank	0.06	0.51	1878	0.00	(2)	0.13	0.65	1878	0.00	(2)	0.03	0.33	1887	0.00	(2)
331, Poway	0.01	0.06	1880	0.00	(2)	0.03	0.16	1880	0.00	(1)	0.08	0.63	1887	0.00	(2)
332, Viejas	0.12										0.03				
333, Fort Yuma	0.28	1.62	1868	0.00	(2)	0.67	2.40	1874	0.00	(2)	0.53	8.60	1862	0.00	(2)
334, San Diego	0.01	0.12	1874	0.00	(2)	0.19	1.95	1873	0.00	(2)	0.03	0.39	1875	0.00	(2)
335, Campo	0.60	2.32	1878	0.00	1879	0.37	1.27	1881	0.00	'77 '79	0.01	0.02	'81 '82	0.00	(2)
336, Otay Mesa	0.10					2.15					0.00				
337, Oakwood	0.15					0.00					0.20				
338, Paradise Valley	.....					1.94					.....				

Name and number of station.	October.				November.				December.				Year.			
	Average.	Maximum.		Minimum.	Average.	Maximum.		Minimum.	Average.	Maximum.		Minimum.	Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.* *Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.* *Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.* *Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
304, Guadaloupe	0.07				4.73				2.05				14.83				
305, Los Alamos	0.00				10.82				2.04				20.04				
306, Point Conception	0.37	1.28	.....	0.00 (2)	0.44	1.18	1879	0.00 (1)	1.87	5.06	1877	0.20 1876	12.23	32.54	83–84*	2.30	76–77*
307, Santa Barbara	0.46	1.91	1874	0.00 (1)	1.49	9.84	1885	0.00 (1)	3.59	12.67	1867	0.00 '74 '76	17.29	34.47	83–84*	4.19	76–77*
308, Nordhoff	0.42				4.89				2.24				27.84				
309, San Buenavent'a	0.44				1.96				2.53				16.87				
310, Los Angeles	0.35	1.81	1874	0.00 (1)	1.49	7.57	1875	0.00 (1)	2.73	8.40	1880	0.00 '71 '76	16.03	32.16	83–84*	3.97	71–72*
311, Ravenna	0.41	1.40	1887	0.00 1886	1.09	5.20	1885	0.00 1883	1.92	5.91	1879	0.00 1882	11.71	27.27	83–84*	3.83	82–83*
312, Newhall	0.26	1.23	1881	0.00 (1)	1.45	9.01	1885	0.00 (1)	2.64	9.23	1879	0.00 '76 '82	14.72	42.11	83–84*	3.04	76–77*
313, San Fernando	0.36	0.95	1881	0.00 '80 '85	1.47	7.94	1885	0.00 1883	2.64	6.29	1879	0.00 1882	15.29	18.91	77–78*	7.87	78–79*
314, Cahuenga Valley	0.45	1.18	.....	0.00	2.36	7.45	.....	0.00	2.51	3.86	.....	1.05	19.45	30.43	.....	9.00	.....
315, El Monte	0.37				2.98				1.96								
316, Spadra	0.33	0.95	1883	0.00 (1)	1.06	5.72	1875	0.00 (1)	1.68	6.01	1880	0.00 1882	12.10	24.50	83–84*	5.80	82–83*
317, Santa Monica	0.01	0.05	1879	0.00 (2)	2.47	7.20	1885	0.10 1886	1.39	2.51	1879	0.27 1886	12.49	17.30	85–86*	10.22	79–80*
318, Downey	0.00				0.72				0.87				10.84				
319, Drum Barracks	0.00	0.00	.....	0.00 ...	0.96	2.53	1864	0.27 1865	2.89	9.26	1867	0.76 1869	10.61				
320, Orange	0.02				2.84				1.22				15.84				
321, Anaheim Bks	0.34	1.12	1883	0.00 '77 '86	0.93	3.90	1879	0.00 (1)	1.90	4.92	1880	0.00 '82 '86	12.12	26.17	83–84*	4.35	78–79*
322, Alosta	1.01	1.95	1883	0.29	1.75	6.32	.....	0.15 1881	2.97	7.57	1880	0.00 1882	25.45	60.62	83–84*	12.09	.....
323, Whitewater	0.13	0.78	1883	0.00 (2)	0.38	1.62	1879	0.00 (1)	1.06	2.08	1879	0.00 '81 '82	4.97	12.81	83–84*	0.84	81–82*
324, Cabazon	0.00				0.00				2.05				4.62				
325, Indio	0.01	0.06	1883	0.00 (2)	0.24	1.00	1882	0.00 (2)	0.45	1.98	1877	0.00 (2)	1.92	5.60	83–84*	0.10	84–85*
326, Fall Brook	0.70			0.00	1.36				2.42				17.70				
327, San Luis Rey	0.11	0.20	1850	0.05 1876	6.69	16.00	1876	0.78 1877	2.08	4.03	1877	0.07 1876	21.28				
328, Escondido	0.48	1.45	.....	.....	1.39	4.68	.....	(T)	1.92	4.96	.....	0.07 ...	15.69	32.05	.....	7.70	.....
329, Julian	0.55	2.75	1883	0.00 (2)	3.37	8.81	1875	0.00 1883	4.68	6.88	1881	1.67 1875	38.78	61.62	81–84*	25.89	80–81*
330, Mammoth Tank	0.14	0.68	1879	0.00 (2)	0.16	1.01	1885	0.00 (2)	0.49	1.64	1877	0.00 (1)	1.85	3.11	83–84*	0.73	78–79*
331, Poway	0.55	1.59	1883	0.00 1887	0.94	2.75	1879	0.00 1883	2.51	5.91	1884	0.13 1886	13.95	29.45	83–84*	8.48	82–83*
332, Viejas	0.04								2.02								
333, Fort Yuma	0.15	0.75	1878	0.00 (2)	0.41	1.83	1859	0.00 (2)	0.32	1.03	1858	0.00 (2)	3.40	7.04	68–69*	0.85	79–80*
334, San Diego	0.29	2.01	1883	0.00 (1)	1.02	2.82	1850	0.00 '72 '78	2.16	6.32		0.13 1882	10.26	25.97	83–84*	3.71	76–77*
335, Campo	0.41	0.73	1881	0.00 1879	1.13	3.00	1879	0.11 1881	2.21	4.85	1880	0.24 1881	15.17				
336, Otay Mesa	0.36				1.45				1.30				14.50				
337, Oakwood	0.23				0.07				0.08				11.87				
338, Paradise Valley	.....				0.37				0.90				.....				

* Seasonal rain-fall, September to August, inclusive. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

IDAHO TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
339	Fort Sherman	Kootnai	47 45	116 46	.....	5 9	Sept., 1881	June, 1887	Signal Service. Apr., 1887.
		Shoshone.†							
340	Fort Lapwai	Nez Perces	46 24	116 48	2,000	17 6	Jan., 1864	June, 1884	Signal Service and U. S. post hospital. Sept., 1865; May to Nov., 1866; Jan., June to Sept., inclusive, and Dec., 1867; Mar., Apr., 1868; July, Sept., 1877; Sept., Nov., 1878; Jan., June, Dec., 1879; Feb., 1880; Aug., 1881.
341	Lewiston	....do	46 24	117 01	.....	6 0	Jan., 1880	Dec., 1885	Signal Service.
		Idaho.†							
		Lemhi.†							
		Washington.†							
		Custer.†							
342	Eagle Rock	Bingham	47 35	116 05	.....	2 6	Dec., 1880	May, 1883	Do.
		Boisé.†							
		Alturas.†							
343	Fort Boisé	Ada	43 37	116 08	1,998	22 4	Mar., 1864	Nov., 1887	Signal Service and U. S. post hospital. Jan., Feb., July, Sept., 1864; June to Dec., 1866, inclusive; Feb., Mar., June to Nov., 1867, inclusive; Nov., 1887.
344	Camp Lyon	...do	43 07	116 55	.....	1 0	Oct., 1867	Sept., 1868	U. S. post hospital.
345	Camp Three Forks	Owyhee	42 40	117 25	5,000	2 0	Jan., 1868	Dec., 1869	Do.
346	Fort Hall	Oneida	43 10	112 00	4,870	4 9	Ma., 1871	Dec., 1880	U. S. post hospital. Record much broken. Oct., Dec., 1871; Jan., Mar., Aug., Sept., 1872; Mar., Apr., Dec., 1873; Jan. to Mar., 1874, inclusive; July, 1875, to June, 1876, inclusive; Sept., 1876 to July, 1879, inclusive; Mar., Nov., 1880.
347	Camp Conner	....do	42 35	111 30	.....	0 3	Jan., 1865	Mar., 1865	U. S. post hospital.
348	Albion	Cassia	42 27	113 35	.....	0 10	Sept., 1884	June, 1885	Dr. George M. Lucas.
		Bear Lake.†							

† No data.

IDAHO TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
339, Fort Sherman	3.05	4.18	1886	1.47	1883	1.70	3.27	1882	0.70	1883	1.40	3.31	1887	0.14	1882
340, Fort Lapwai	1.70	4.06	1883	0.00	1866	1.48	4.06	1884	0.13	1865	1.68	4.82	1877	0.24	1876
341, Lewiston	2.27	4.46	1881	0.33	1880	2.02	4.33	1881	0.20	1880	1.07	3.21	1883	0.29	1880
342, Eagle Rock	3.38	4.41	1882	2.08	1883	2.92	5.14	1881	1.25	1882	1.61	3.45	1882	0.41	1883
343, Fort Boisé	2.48	5.29	1875	0.90	1880	1.54	6.49	1872	0.12	1869	1.82	7.66	1871	0.03	1885
344, Camp Lyon	1.81	.....	.....	.....	.....	0.92	.....	.....	.....	.....	1.58	.....	.....	.....	.....
345, Camp Three Forks	1.80	1.95	1869	1.64	1868	0.90	1.14	1869	0.66	1868	2.67	3.01	1869	2.33	1868
346, Fort Hall	0.65	0.70	1880	0.20	1873	1.14	1.05	1873	0.61	1872	1.13	1.13	1871	.....	.....
347, Camp Conner	1.10	.....	.....	.....	.....	0.90	.....	.....	.....	.....	0.04	.....	.....	.....	.....
348, Albion	0.30	.....	.....	.....	.....	2.00	.....	.....	.....	.....	0.19	.....	.....	.....	.....

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
339, Fort Sherman	1.50	2.40	1883	0.00	1885	1.81	3.00	1883	0.66	1884	1.26	2.40	1887	0.16	1882
340, Fort Lapwai	1.26	3.00	1882	0.10	1865	1.80	3.91	1877	0.26	1881	1.64	3.86	1884	0.08	1878
341, Lewiston	1.12	2.60	1881	0.19	1885	1.33	3.02	1885	0.23	1881	2.38	5.66	1884	0.01	1883
342, Eagle Rock	2.41	3.35	1882	0.76	1883	0.72	1.12	1883	0.30	1882	0.80	1.09	1881	0.52	1882
343, Fort Boisé	1.69	4.73	1869	0.09	1885	1.41	3.14	1885	0.00	1865	0.78	1.15	1868	0.15	1873
344, Camp Lyon	1.19	.....	.....	.....	.....	1.81	.....	.....	.....	.....	1.58	.....	.....	.....	.....
345, Camp Three Forks	0.74	1.23	1869	0.24	1868	1.68	2.56	1869	0.81	1868	0.90	1.60	1868	0.20	1869
346, Fort Hall	0.94	1.50	1880	0.00	1874	2.95	3.00	1874	0.10	1875	0.90	2.20	1872	0.10	1875
347, Camp Conner†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
348, Albion	0.30	.....	.....	.....	.....	2.34	.....	.....	.....	.....	1.02	.....	.....	.....	.....

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
339, Fort Sherman	0.43	1.67	1884	0.00	{1882 1883}	0.05	0.17	1884	0.00	{1882 1886}	1.10	1.95	1881	0.08	1882
340, Fort Lapwai	0.41	1.78	1880	0.00	{1870 1881}	0.44	1.20	1879	0.00	{1868 1878}	0.84	2.44	1879	0.18	1875
341, Lewiston	0.74	1.87	1880	(T)	1883	0.32	1.09	1880	(T)	1883	0.63	1.17	1881	0.20	1880
342, Eagle Rock	0.76	1.21	1881	0.32	1882	0.51	0.95	1881	0.07	1882	0.58	1.17	1882	0.00	1881
343, Fort Boisé	0.23	1.10	1869	0.00	{1868 1872 1875}	0.20	1.65	1873	0.00	{1868 1871}	0.35	2.11	1884	0.00	{1869 1876}
344, Camp Lyon	0.15	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.19	.....	.....	.....	.....
345, Camp Three Forks	0.52	0.64	1869	0.39	1868	0.13	0.24	1869	0.02	1868	0.18	0.25	1869	0.12	1868
346, Fort Hall	1.65	3.00	1880	0.10	1873	1.01	1.76	1873	0.00	1876	0.38	0.80	1871	0.00	{1873 1879}
347, Camp Conner†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
348, Albion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	.....	.....	.....	.....

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
339, Fort Sherman	2.02	2.82	1884	0.59	1882	2.73	5.28	1885	0.29	1882	2.68	4.29	1886	1.48	1885	19.73	21.30	1886	13.99	1882
340, Fort Lapwai	1.20	4.26	1876	0.00	1869	2.14	4.03	1872	0.25	1868	2.14	5.71	1866	0.20	1870	16.73	24.22	1882	10.33	1873
341, Lewiston	1.75	2.83	1882	0.71	1885	1.52	2.33	1880	0.36	1884	3.10	6.31	1880	1.07	1881	18.25	21.71	1884	14.74	1882
342, Eagle Rock	1.60	1.71	1881	1.50	1882	1.20	1.91	1881	0.49	1882	2.18	4.50	1880	0.80	1881	18.67	21.31	1881	18.05	1882
343, Fort Boisé	0.84	4.06	1883	0.00	1869	1.28	4.43	1874	0.02	1868	2.12	5.96	1871	0.01	1871	14.74	25.80	1871	6.44	1868
344, Camp Lyon	0.49	.....	.....	.....	.....	1.35	.....	.....	.....	.....	3.94	.....	.....	.....	.....	15.01	.....	.....	.....	.....
345, Camp Three Forks	0.12	0.24	1868	0.00	1869	1.78	3.10	1869	0.46	1868	1.46	2.14	1868	0.77	1869	12.88	.....	.....	.....	.....
346, Fort Hall	1.58	1.60	1879	0.20	1872	3.29	3.90	1874	0.59	1871	1.89	2.40	1879	0.45	1872	17.51	11.77	1880	9.67	1873
347, Camp Conner†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
348, Albion	1.90	.....	.....	.....	.....	0.60	.....	.....	.....	.....	7.34	.....	.....	.....	.....	.....	.....	.....	.....	.....

†No data. (T) Trace of rain-fall.

NEVADA.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	From—	To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
349	Wadsworth	Washoe	39 36	119 16	.....	6 4	July, 1881	Nov., 1887	Central Pacific R. R. Aug., 1883.
350	Reno	....do	39 31	119 42	.....	6 3	July, 1881	Nov., 1887	Central Pacific R. R. Feb., Oct., 1883.
351	Brown's	....do	39 25	119 35	.....	6 2	July, 1881	Nov., 1887	Central Pacific R. R. May, 1883; May, Nov., 1886.
352	Camp McDermit	Humboldt	41 58	117 45	4,700	18 10	Feb., 1866	Dec., 1887	U. S. post hospital. Record much broken. Jan., Mar. to Aug., 1866, inclusive; July to Dec., 1867, inclusive; Jan., Feb., Mar., July, Oct., 1868; Oct., 1869; Mar., 1870; Dec., 1873, to Nov., 1874, inclusive; Feb., 1876; Feb., 1878; Jan., 1880; Jan., Nov., Dec., 1887.
353	Camp Winfield Scott.	....do	41 38	117 28	.....	2 8	Jan., 1867	Apr., 1870	U. S. post hospital. Record much broken. May and Oct., 1867; Feb. and Apr., 1868; Oct., Nov., Dec., 1869; Mar., 1870.
354	Camp McGarry	....do	41 30	119 05	6,000	2 0	Nov., 1865	Oct., 1868	U. S. post hospital. Record much broken. June, July, Aug., 1866; Feb., Mar., Apr., 1867; Feb., Apr. to Aug., 1868, inclusive.
355	Golconda	....do	41 04	117 20	.....	6 3	July, 1881	Nov., 1887	Central Pacific R. R. Oct., 1881; June, 1884; Nov., 1885.
356	Winnemucca	....do	40 58	117 43	.....	8 11	July, 1877	Dec., 1887	Signal Service. Dec., 1880; June, 1883, to Nov., 1884, inclusive.
357	Humboldt	....do	40 35	118 20	.....	6 0	July, 1881	Nov., 1887	Central Pacific R. R. Record much broken. June, Aug., 1884; Jan., 1885; Feb., June, 1886.
358	Tecoma	Elko	41 17	114 06	.....	6 4	July, 1881	Nov., 1887	Central Pacific R. R. Nov., 1884.
359	Otego	....do	41 11	114 32	.....	5 1	July, 1881	Aug., 1887	Central Pacific R. R. Year 1885; June, 1886.
360	Toano	....do	41 08	114 23	.....	6 4	July, 1881	Nov., 1887	Central Pacific R. R. Feb., 1883.
361	Wells	....do	41 05	114 52	.....	6 2	July, 1881	Nov., 1887	Central Pacific R. R. Mar., 1883; Mar., 1885; Nov., 1886.
362	Halleck	....do	40 59	115 30	.....	5 10	July, 1881	Nov., 1887	Central Pacific R. R. Record much broken. June, July, 1883; Sept., 1884; Aug., Sept., 1885; Nov., 1886; Mar., 1887.
363	Elko	....do	40 51	115 40	.....	6 1	July, 1881	Nov., 1887	Central Pacific R. R. Record much broken. Jan., Aug., 1883; July, 1884; Dec., 1886.
364	Camp Halleck	....do	40 49	115 20	6,000	10 7	Nov., 1867	Oct., 1886	U. S. post hospital. Record much broken. Oct., Nov., Dec., 1869; June, 1870; July, Aug., 1871; June, Sept., Oct., Nov., Dec., 1872; Feb. to May, 1873, inclusive; Jan., Feb., Mar., 1874.
365	Carlin	....do	40 35	116 08	.....	6 4	July, 1881	Nov., 1887	Central Pacific R. R. May, 1885.
366	Battle Mountain	Lander	40 34	117 05	.....	6 8	July, 1881	Nov., 1887	Central Pacific R. R. May, 1885; Sept., 1887.
366½	Austin	....do	39 20	117 03	.....	2 9	Dec., 1877	Sept., 1880	Signal Service. Feb., 1878.
367	Palisade	Eureka	40 35	116 12	.....	6 3	July, 1881	Nov., 1887	Central Pacific R. R. June, 1882; Dec., 1883.
368	Beowawe	....do	40 30	116 26	.....	6 5	July, 1881	Nov., 1887	Central Pacific R. R.
369	Eureka	....do	39 29	116 00	.....	0 2	Jan., 1880	Apr., 1880	Morris Bien. Feb., Mar., 1880.
370	Fort Ruby	White Pine	40 02	115 35	6,153	2 0	May, 1863	Oct., 1868	U. S. post hospital. Record much broken. June to Aug., 1863, inclusive; Oct., 1863; Oct., 1864; Jan. to May, 1865, inclusive; Jan. and Feb., Apr. to Dec., 1866, inclusive; Jan., 1867, to July, 1868, inclusive.
370½	Hamilton	....do	39 16	115 28	.....	3 2	Aug., 1877	Sept., 1880	Signal Service.
371	Hot Springs	Churchill	39 45	119 00	.....	5 10	July, 1881	Nov., 1887	Central Pacific R. R. Record much broken. Dec., 1881; Dec., 1882; May, 1883; Mar., 1884; Aug., 1885; Dec., 1886; July, 1887.
372	Fort Churchill	Lyon	39 20	119 05	4,284	3 9	Jan., 1862	May, 1869	U. S. post hospital. Record much broken. Mar., Apr., May, Aug., Oct., 1863; Feb. to July, inclusive, Sept., Oct., 1864; Apr. and May, Sept. to Dec., 1865, inclusive; Jan. to Aug., inclusive, Nov., Dec., 1866; Jan. to Apr., inclusive, Aug. to Nov., inclusive, 1867; Feb., Mar., Apr., July, Aug., Oct., and Nov., 1868.
373	Carson City	Storey.† Ormsby	39 12	119 40	.....	9 9	Jan., 1875	Dec., 1886	Charles W. Friend. Record much broken. May, 1877, to July, 1878, inclusive; Sept., 1878, to July, 1879, inclusive; Sept., 1879.
374	Hawthorne	Nye.† Douglas.† Esmeralda	38 30	118 30	.....	3 3	Apr., 1884	Oct., 1887	Central Pacific R. R. Record much broken. May, 1885; Jan., Nov., Dec., 1886.
375	Pioche	Lincoln	37 54	114 28	.....	5 10	Aug., 1877	May, 1883	Signal Service.
376	Tem-pah-ute	....do	37 25	115 40	.....	0 3	Dec., 1878	Mar., 1879	Dr. John Stearns. Feb., 1879.

† No data.

NEVADA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
349, Wadsworth	0.60	1.62	1886	0.20	1883	0.66	2.52	1887	0.03	1885	0.56	1.10	1882	0.00	1887
350, Reno	1.15	3.00	1886	(T)	1885	0.87	2.90	1887	0.00	'82 '85	0.78	2.50	1882	0.00	'85 '87
351, Brown's	0.32	0.56	1884	0.05	1883	1.16	4.48	1886	0.00	1882	0.68	2.00	1883	0.10	1885
352, Camp McDermit	1.70	6.72	1884	0.00	1880	1.41	4.80	1884	0.20	1882	1.28	5.86	1883	0.00	1886
353, Camp Winfield	4.29	8.26	1868	1.65	1869	2.31	4.50	1870	0.54	1874	1.54	2.08	1869	0.50	1867
354, Camp McGarry	4.31	8.00	1868	2.33	1866	0.41	.....	.....	.....	.....	6.00	9.22	1868	2.78	1866
355, Golconda	0.39	0.69	1884	0.09	1887	0.57	1.15	1887	0.02	1886	0.67	1.81	1884	0.05	1885
356, Winnemucca	1.01	3.08	1881	0.21	1878	1.01	1.59	1881	0.17	1883	0.75	1.36	1878	0.20	1885
357, Humboldt	0.64	1.20	1884	0.00	'83 '87	0.65	1.25	1887	0.10	1885	0.83	2.27	1882	0.00	'85 '87
358, Tecoma	0.54	1.00	'86 '87	0.10	1884	0.48	0.87	1884	0.00	1882	0.46	0.93	1884	0.00	1885
359, Otego	1.21	2.05	1886	0.90	1882	1.00	1.70	1887	0.40	1883	0.86	1.45	1886	0.00	1883
360, Toano	0.87	1.18	1887	0.50	1883	0.66	1.55	1887	0.40	1886	0.87	2.50	1883	0.00	1885
361, Wells	1.23	2.55	1882	0.70	1884	0.64	1.05	1883	0.00	1887	1.05	2.65	1882	0.00	1887
362, Halleck	0.86	2.16	1886	0.05	1885	0.90	0.24	1886	1.85	1887	1.14	2.06	1882	0.04	1885
363, Elko	1.06	0.40	1887	0.00	(1)	0.83	0.31	1881	0.00	(1)	0.68	1.00	1884	0.00	1866
364, Camp Halleck	2.62	12.37	1877	0.02	1872	1.32	3.52	1878	0.25	1870	1.91	8.82	1876	0.06	1872
365, Carlin	1.34	2.13	1886	0.61	1887	1.12	2.00	1887	0.42	1886	0.97	1.93	1882	0.00	1885
366, Battle Mountain	0.94	1.50	1882	0.70	1884	0.73	1.48	1885	0.23	1884	0.81	2.10	1882	0.16	1885
366½, Austin	1.15	2.13	1879	0.26	1878	0.87	1.25	1880	0.49	1879	1.15	1.31	1878	0.43	1879
367, Palisade	0.82	1.57	1882	0.30	1886	0.90	2.12	1887	0.40	1883	0.75	2.17	1884	0.00	(1)
368, Beowawe	0.61	0.78	1886	0.20	1887	0.68	1.60	1884	0.08	1886	0.55	1.65	1882	0.00	1887
369, Eureka	0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
370, Fort Ruby	2.24	.....	.....	.....	.....	0.23	.....	.....	.....	.....	1.63	2.00	1866	1.26	1864
370½, Hamilton	2.38	3.90	1879	0.80	1880	2.45	4.60	1880	0.69	1878	0.74	1.20	1880	0.20	1879
371, Hot Springs	0.46	0.95	1886	0.12	1887	0.54	1.80	1887	0.00	'82 '85	0.28	0.65	1862	0.00	'85 '87
372, Fort Churchill	1.42	4.84	1862	0.04	1863	0.61	1.50	1869	0.10	1863	0.21	0.61	1869	0.00	1862
373, Carson City	2.86	6.78	1875	0.40	1885	1.00	2.77	1884	0.08	1877	1.57	4.22	1882	0.31	1885
374, Hawthorne	(T)	(T)	1887	0.00	1885	0.62	1.85	1887	0.00	'85 '86	0.28	0.85	1886	0.00	1887
375, Pioche	0.47	1.13	1879	0.20	1883	0.55	1.67	1878	0.17	1879	0.39	0.73	1878	0.12	'79 '80
376, Tem-pah-ute	0.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	(T)	.....	.....	.....	.....

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
349, Wadsworth	0.31	0.81	1885	0.00	1884	0.31	0.69	1887	0.25	1882	0.41	1.40	1884	0.00	'82 '83
350, Reno	0.28	0.80	1885	0.00	'83 '86	0.25	0.60	1882	0.00	'84 '85	0.18	0.80	1884	0.00	(1)
351, Brown's	0.67	1.43	1885	0.14	1883	0.36	1.10	1887	0.05	1885	0.33	1.06	1885	0.00	1886
352, Camp McDermit	1.60	13.00	1883	0.14	'69 '82	1.70	12.28	1883	0.19	1886	0.89	4.44	1884	0.00	1873
353, Camp Winfield	0.37	0.50	1870	0.29	1867	1.77	1.99	1868	1.55	1869	0.69	1.25	1869	0.26	1867
354, Camp McGarry	0.43	.....	.....	.....	.....	3.73	6.65	1866	0.80	1867	0.56	.....	.....	.....	.....
355, Golconda	0.79	1.91	1884	0.38	1887	0.52	1.51	1884	0.00	1886	0.73	1.16	1885	0.40	1883
356, Winnemucca	1.16	1.94	1887	0.25	1878	0.78	1.89	1883	0.14	1886	0.99	1.27	1879	0.00	1880
357, Humboldt	0.68	2.21	1885	0.00	1887	0.24	0.64	1883	0.00	'86 '87	0.98	1.90	1885	0.22	1883
358, Tecoma	0.84	2.16	1884	0.00	1886	0.39	1.10	1884	0.00	'86 '87	0.28	0.50	'84 '85	0.00	1883
359, Otego	1.45	2.22	1883	0.48	1886	0.41	1.26	1884	0.02	1887	0.43	1.21	1884	0.00	1883
360, Toano	1.00	1.87	1884	0.22	1882	1.25	2.49	1885	0.15	1887	1.65	7.50	1886	0.00	1883
361, Wells	1.22	2.30	1883	0.00	1887	0.85	1.92	1885	0.00	1887	0.58	1.57	1884	0.00	'83 '87
362, Halleck	0.81	1.80	1884	0.20	1886	0.79	1.55	1885	0.12	1887	0.26	0.56	1884	0.00	1887
363, Elko	0.52	0.59	1885	0.00	1887	0.28	1.80	1885	0.00	1884	0.37	1.27	1884	0.00	1887
364, Camp Halleck	1.22	5.19	1877	0.05	1874	1.62	3.90	1871	0.25	1874	0.72	2.07	1868	0.00	1873
365, Carlin	0.96	1.62	1887	0.30	1882	0.51	1.58	1884	0.00	1882	0.54	1.85	1884	0.00	1883
366, Battle Mountain	1.52	2.20	1885	1.12	1883	0.70	1.29	1884	0.14	1887	0.73	2.18	1884	0.21	1886
366½, Austin	1.91	2.92	1880	1.37	1878	0.86	1.56	1878	0.46	1879	0.89	1.52	1878	0.01	1880
367, Palisade	0.68	1.50	1884	0.25	1882	0.45	1.34	1884	0.00	1886	0.63	1.72	1884	0.10	'86 '87
368, Beowawe	0.69	1.10	1882	0.07	1887	0.36	1.29	1884	0.00	1887	0.65	2.25	1884	0.00	(1)
369, Eureka	2.66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
370, Fort Ruby	1.57	.....	.....	.....	.....	2.04	3.41	1864	0.68	1863	0.57	0.71	1864	0.47	1865
370½, Hamilton	2.23	3.50	1880	1.60	'78 '79	0.77	1.98	1878	0.13	1879	0.32	0.57	1878	0.00	1880
371, Hot Springs	0.31	0.55	1882	0.00	1887	0.25	0.45	1885	0.00	1887	0.38	1.28	1884	0.00	'83 '85
372, Fort Churchill	0.10	0.11	1862	0.10	1869	1.27	4.00	1868	0.02	1867	0.13	0.55	1862	0.00	(1)
373, Carson City	1.21	5.02	1880	0.12	'75 '81	0.24	0.92	1883	0.04	1880	0.44	1.97	1884	(T)	1876
374, Hawthorne	0.36	0.86	1887	0.18	1884	0.23	0.69	1884	(T)	1887	0.57	1.13	1887	0.00	1886
375, Pioche	1.11	1.98	1882	0.46	1880	0.36	1.27	1878	0.01	1880	0.75	3.23	1882	0.03	'80 '81
376, Tem-pah-ute†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

†No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

NEVADA—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
349, Wadsworth	0.28	1.26	1887	0.00	(1)	0.05	0.10	'81 '87	0.00	'82 '86	0.05	0.15	(1)	0.00	(1)
350, Reno	0.06	0.20	1883	0.00	(1)	0.00	0.00	...	0.00	.....	0.00	0.00	.....	0.00	.....
351, Brown's	0.02	0.15	1884	0.00	(1)	0.02	0.15	1887	0.00	(1)	0.06	0.25	1887	0.00	(1)
352, Camp McDermit	0.24	0.62	1876	0.00	(1)	0.25	2.06	1886	0.00	(2)	0.23	1.69	1884	0.00	(1)
353, Camp Winfield Scott	0.20	0.48	1868	0.00	1867	0.24	0.38	1867	0.00	1868	1.03	1.52	1867	0.32	1869
354, Camp McGarry	0.00	.....	.....	.....	.....	0.22	.....	.....	.....	.....	0.82	2.15	1867	0.12	1866
355, Golconda	0.07	0.42	1886	0.00	(1)	0.06	0.25	1885	0.00	'77 '82	0.26	1.04	1882	0.00	'86 '87
356, Winnemucca	0.16	1.61	1886	0.00	'80 '81	0.09	0.50	1878	0.00	'77 '82	0.31	1.28	1882	0.00	(1)
357, Humboldt	(T)	0.03	1885	0.00	(2)	0.04	0.27	1887	0.00	(2)	0.08	0.25	1882	0.00	(1)
358, Tecoma	0.22	0.55	1887	0.00	'82 '85	0.21	0.40	1886	0.10	1884	0.31	0.83	1884	0.00	1883
359, Otego	0.32	1.10	1887	0.00	'83 '86	0.36	0.60	1884	0.00	1887	0.20	0.42	1884	0.04	1883
360, Toano	0.18	0.86	1887	0.00	(1)	0.15	0.55	1886	0.00	'87 '87	0.21	0.80	1884	0.00	(1)
361, Wells	0.21	0.60	1881	0.00	(1)	0.40	0.96	1881	0.00	1887	0.15	0.28	1882	0.00	'81 '86
362, Halleck	0.05	0.25	1887	0.00	'85 '86	0.07	0.14	'82 '84	0.00	'81 '86	0.15	0.40	1887	0.00	'82 '86
363, Elko	0.07	0.40	1887	0.00	(1)	0.12	0.36	1881	0.00	(1)	0.21	1.00	1884	0.00	1886
364, Camp Halleck	0.52	1.65	'76 '77	0.00	1870	0.18	0.97	1869	0.00	(1)	0.34	1.06	1879	0.00	'83 '86
365, Carlin	0.20	0.35	1887	0.00	'83 '85	0.25	0.58	1883	0.00	'82 '86	0.33	0.74	'82 '84	0.00	'83 '86
366, Battle Mountain	0.08	0.38	1886	0.00	(1)	0.11	0.33	1885	0.00	'82 '86	0.46	1.33	1882	0.00	'83 '86
366½, Austin	0.09	0.15	1878	0.02	1879	0.47	1.31	1878	(T)	1879	0.32	0.85	1878	(T)	1879
367, Palisade	0.13	0.85	1881	0.00	(1)	0.18	0.25	1885	0.00	(1)	0.41	1.09	1884	0.00	1883
368, Beowawe	0.07	0.75	1886	0.00	(1)	0.07	0.39	1885	0.00	(1)	0.29	1.09	1882	0.00	(1)
369, Eureka †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
370, Fort Ruby	0.59	1.08	1865	0.11	1864	1.62	2.37	1865	1.20	1868	0.51	1.47	1865	0.03	1864
370½, Hamilton	0.37	0.60	1880	0.00	1878	0.94	1.60	1878	0.05	1877	0.60	2.10	1878	0.00	1879
371, Hot Springs	0.13	0.35	1882	0.00	'85 '86	0.02	0.08	1884	0.00	(1)	0.07	0.44	1882	0.00	(1)
372, Fort Churchill	1.16	4.63	1863	0.00	'65 '67	0.22	0.35	1864	0.00	1865	0.05	0.20	1862	0.00	'66 '68
373, Carson City	0.23	1.25	1886	0.00	(1)	0.11	0.62	1884	0.00	(1)	0.15	0.40	1882	0.00	(1)
374, Hawthorne	0.09	0.25	1887	0.00	1884	0.02	0.10	1884	0.00	'86 '87	0.08	0.30	1887	0.00	(1)
375, Pioche	0.22	0.29	1878	0.17	1879	0.79	1.73	1881	0.18	1877	0.10	0.22	1878	0.00	'79 '81
376, Tem-pah-ute †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Name and number of station.	October.					November.					December.				Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
349, Wadsworth	0.50	2.35	1886	0.00	(1)	0.27	1.13	1885	0.00	'84 '87	0.48	1.10	1882	0.00	1886	4.48	5.72	1887	2.75	1883
350, Reno	0.10	0.60	1883	0.00	(1)	0.50	1.55	1885	0.00	(1)	0.41	0.80	1881	0.00	'82 '83	4.58	6.17	1884	2.95	1885
351, Brown's	0.59	1.36	1884	0.00	(1)	0.28	1.39	1885	0.00	1887	0.32	0.55	1885	0.00	1883	4.61	6.17	1886	2.09	1882
352, Camp McDermit	0.94	6.66	1883	0.00	1887	0.87	3.73	1875	0.00	1884	1.17	3.68	1880	0.00	1878	12.28	40.83	1883	5.94	1881
353, Camp Winfield Scott	0.06	.....	.....	.....	.....	1.00	1.97	1867	0.02	1868	3.83	6.17	1867	1.50	1868	17.33	.....	.....	.....	.....
354, Camp McGarry	1.02	1.65	1866	0.58	1868	1.99	2.72	1867	0.90	1866	2.97	3.79	1867	2.00	1865	22.46	.....	.....	.....	.....
355, Golconda	0.70	1.44	1883	0.00	1887	0.27	1.07	1882	0.00	1884	0.44	1.12	1884	0.25	1886	5.47	8.93	1884	2.84	1887
356, Winnemucca	0.62	1.76	1882	0.00	1880	0.83	3.78	1885	0.10	1880	1.22	3.29	1884	0.00	1877	7.93	11.80	1885	6.77	1878
357, Humboldt	0.70	2.13	1884	0.00	'85 '87	0.40	0.97	1882	0.00	'84 '87	0.75	2.30	1881	0.24	1886	5.99	8.49	1882	2.54	1886
358, Tecoma	0.65	1.60	1882	0.00	'85 '87	0.36	1.10	1885	0.00	1881	0.54	1.69	1884	0.10	1882	5.28	9.26	1884	4.18	1887
359, Otego	1.01	1.66	1886	0.62	1883	0.54	1.70	1883	0.00	1884	1.38	3.15	1884	0.51	1886	9.17	12.72	1884	7.98	1886
360, Toano	0.58	1.25	1884	0.03	1885	0.39	1.35	1886	0.00	1884	0.76	2.20	1884	0.38	1886	8.57	16.68	1886	4.10	1882
361, Wells	1.00	2.34	1882	0.00	'81 '87	0.60	1.30	1883	0.00	1884	1.32	3.25	1886	0.85	1881	9.25	13.73	1882	1.36	1887
362, Halleck	0.49	1.19	1886	0.00	'85 '87	0.55	1.64	1885	0.00	1884	0.72	1.33	1884	0.20	1886	6.79	8.50	1884	3.61	1887
363, Elko	0.20	0.59	1885	0.00	1887	0.46	1.80	1885	0.00	1884	1.58	3.41	1884	0.69	1881	6.38	11.24	1884	3.40	1887
364, Camp Halleck	1.26	2.62	1874	0.00	1870	2.26	6.29	1875	0.15	1873	1.76	4.55	1879	0.29	1870	15.73	27.01	1877	5.43	1870
365, Carlin	0.75	1.49	1882	0.00	1887	0.49	2.17	1885	0.00	'83 '84	1.32	2.89	1884	0.45	1882	8.78	14.99	1884	5.24	1887
366, Battle Mountain	0.81	1.94	1884	0.00	'85 '87	0.53	1.50	1886	0.00	1884	0.84	1.82	1884	0.30	1882	8.26	11.96	1884	4.46	1887
366½, Austin	0.84	0.85	1879	0.82	1878	0.92	0.99	1878	0.85	1879	0.74	1.88	1879	0.04	1877	10.21	.....	.....	.....	.....
367, Palisade	0.80	2.10	1882	0.00	1887	0.78	1.88	1885	0.00	1884	1.07	2.07	1884	0.37	1886	7.60	13.10	1884	3.27	1887
368, Beowawe	0.62	1.19	1886	0.00	'85 '87	0.56	1.18	1885	0.00	1884	0.80	1.84	1884	0.22	1882	5.95	10.97	1884	1.97	1887
369, Eureka †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
370, Fort Ruby	1.89	3.33	1865	0.45	1868	0.94	1.00	1864	0.87	1863	1.76	2.00	1864	1.53	1863	15.59	.....	.....	.....	.....
370½, Hamilton	1.46	2.70	1879	0.65	1878	1.65	2.60	1879	1.15	1878	3.70	8.30	1879	1.10	1878	17.61	23.28	1879	14.71	1878
371, Hot Springs	0.22	0.51	1882	0.00	'85 '87	0.35	1.54	1885	0.00	(1)	0.25	0.50	1884	0.03	1883	3.26	4.49	1882	1.42	1883
372, Fort Churchill	0.18	0.35	1862	0.00	1866	1.04	1.88	1864	0.00	1862	1.04	3.35	1867	0.00	1863	7.43	.....	.....	.....	.....
373, Carson City	0.52	1.61	1882	0.00	1880	1.58	7.01	1875	0.00	1884	1.84	4.75	1884	0.00	1876	11.75	18.03	1875	7.05	1883
374, Hawthorne	0.01	0.05	1884	0.00	(1)	1.08	2.15	1885	0.00	1884	0.48	0.52	1884	0.45	1885	3.82	.....	.....	.....	.....
375, Pioche	0.53	0.66	1879	0.35	1878	0.35	0.71	1882	0.00	1877	0.85	1.84	1880	0.08	'81 '82	6.47	8.36	1878	4.67	1880
376, Tem-pah-ute †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

UTAH TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
377	Blue Creek	Box Elder	41 47	112 30	.....	6 4	July, 1881	Nov., 1887	Central Pacific R. R. Jan., 1883; Mar., 1884.
378	Promontory	....do	41 35	112 35	.....	6 2	July, 1881	Nov., 1887	Central Pacific R. R. Nov., 1884; Mar., Nov., 1886; Apr., 1887.
379	Corinne	....do	41 34	112 8	4,294	9 3	Jan., 1871	Nov., 1887	Central Pacific R. R. U. S. post hospital. Jan., 1871, to Sept., 1872, inclusive; Mar., 1874, to June, 1881, inclusive.
380	Kelton	....do	41 33	113 9	.....	6 3	July, 1881	Nov., 1887	Central Pacific R. R. Aug., 1881; Oct., 1884; Nov., 1885.
381	Terrace	....do	41 30	113 30	.....	6 2	July, 1881	Nov., 1887	Central Pacific R. R. Nov., 1882; Aug., 1883; Oct., 1884; Mar., Oct., 1885.
382	Logan	Cache	41 44	111 48	.....	0 5	Nov., 1883	Mar., 1884	C. M. Parks.
383	Ogden	Rich.† Weber	41 12	111 57	.....	6 3	July, 1881	Nov., 1887	Central Pacific R. R. Sept., 1881; Jan., Apr., 1882.
384	Coalville	Morgan.† Summit	40 56	111 28	.....	6 8	Dec., 1874	June, 1883	Thomas Bullock. Record broken. July, 1875; Mar., Apr., Aug., Sept., 1879; Oct., 1880; Nov., Dec., 1881; Apr., May, Nov., Dec., 1882; Jan., Feb., 1883.
385	Wanship	....do	40 40	111 20	6,200	1 5	Dec., 1867	Dec., 1874	Thomas Bullock. Record much broken. Apr. to Nov., 1868, inclusive; Mar. to Dec., 1869; Jan. to Dec., 1870; Apr. to Nov., 1871; Apr., May, July, Aug., Sept., Nov., Dec., 1872; Jan., 1873, to Nov., 1874, inclusive.
385½	Deep Creek	Davis.† Tooele	40 26	112 22	.....	2 8	Sept., 1877	Sept., 1880	Signal Service. Oct., Nov., 1877; May, June, July, 1880.
386	Camp Douglas	Uintah.† Salt Lake	40 46	111 50	4,903	18 2	Mar., 1864	Mar., 1883	U. S. post hospital. Record much broken. July, Oct., Nov., 1864; June to Aug., 1866, inclusive; Dec., 1869; June, 1878; May, 1881; Sept., Nov., 1882.
387	Salt Lake City	....do	40 46	111 54	4,354	22 3	Feb., 1857	Dec., 1887	Signal Office. Record much broken. Nov., 1857, to Aug., 1858, inclusive; Nov., Dec., 1858; July, 1859; Jan. to Dec., 1859, inclusive; June, Oct., 1861; Jan., 1862, to Jan., 1863, inclusive; Mar., Apr., May, 1863; July to Dec., 1863, inclusive; Jan., Mar., Apr., May, Nov., 1867; Feb., Mar., Apr., July, 1868; Sept., 1868, to Apr., 1872, inclusive; Jan., Feb., 1874.
388	Spring Lake Villa.	Wasatch.† Utah	41 1	111 45	.....	0 3	July, 1875	Sept., 1875	J. Duncan Putnam.
389	Camp Floyd	....do	40 16	112 08	.....	2 6	July, 1858	Dec., 1860	U. S. post hospital.
390	Goshen	....do	39 55	111 52	.....	1 11	July, 1881	June, 1883	Central Pacific R. R. Apr., 1882.
391	Nephi	Juab	39 42	111 49	.....	2 6	Mar., 1883	Aug., 1885	James G. Bardsley.
391½	Fillmore	San Pete.† Emery.† Millard	38 58	112 20	.....	3 2	Aug., 1877	Sept., 1880	Signal Service.
392	Frisco	Sevier.† Beaver	38 25	113 16	.....	2 6	July, 1885	Dec., 1887	Do.
393	Saint George	Pi Ute.† San Juan.† Iron.† Garfield.† Washington	37 10	113 34	2,800	6 2	Jan., 1861	Oct., 1880	H. Pearce, Signal Service. G. A. Burgon. Record much broken. Mar., May, July, Oct., Dec., 1861; Jan., 1862; Apr. to Dec., 1862; Mar., July, 1863; Sept., 1863, to Apr., 1864, inclusive; June, 1864; Aug., 1865; Jan. to Mar., 1866; May, 1866, to Feb., 1869, inclusive; June, July, 1869; Sept., 1869, to July, 1877, inclusive.
394	Harrisburgh	....do	37 10	112 57	2,375	2 2	Feb., 1869	Feb., 1872	James Lewis. Sept., 1869; June, 1870; Aug., 1870, to Jan., 1871, inclusive: May, June, Oct., 1871.
395	Mount Carmel	Kane	37 17	112 41	.....	3 4	Jan., 1874	July, 1878	Rasmus M. Engelhard, Jan. to Dec., 1875, inclusive; June, July, 1876; Jan., Nov., Dec., 1877.
396	Kanab	....do	37 3	112 34	4,909	5 4	May, 1872	Oct., 1879	James Lewis. Record much broken. Oct., 1872, to Jan., 1873, inclusive; Mar., 1873, to June, 1874, inclusive; Sept., 1874; June, 1875; Mar., May, Aug., 1878.

† No data.

UTAH TERRITORY—Continued.

UTAH TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
377, Blue Creek	0.83	1.16	1886	0.45	1882	0.68	1.52	1885	0.35	1886	0.39	1.05	1886	0.02	1883
378, Promontory	0.88	1.37	1886	0.32	1885	0.87	0.75	1884	0.20	1883	0.77	2.05	1883	0.00	1887
379, Corinne	0.99	1.65	1885	0.55	1884	1.40	2.40	1882	0.80	1883	0.81	3.80	1884	0.10	1885
380, Kelton	0.53	1.13	1886	0.04	1887	0.84	1.80	1882	0.48	1887	0.45	2.20	1884	0.02	1885
381, Terrace	0.44	0.85	1883	0.08	1885	0.47	0.90	1884	0.10	1883	0.55	1.58	1884	0.18	1883
382, Logan	1.00					4.00					1.00				
383, Ogden	1.56	2.12	1885	0.77	1884	1.74	2.28	1887	0.32	1883	1.16	3.63	1884	0.00	1885
384, Coalville	2.38	6.90	1875	0.40	1878	1.72	3.65	1875	0.20	1877	2.17	3.00	1881	0.12	1882
385, Wanship	1.09	1.70	1869	0.23	1872	1.43	2.05	1872	0.70	1868	1.88	2.20	1871	1.45	1872
385½, Deep Creek	0.40	0.80	1878	0.02	1880	0.65	1.80	1878	0.00	1879	0.06	0.12	1880	(T)	1879
386, Camp Douglas	1.91	4.51	1867	0.52	1880	1.40	3.18	1878	0.40	1877	2.07	4.94	1867	0.42	1880
387, Salt Lake City	1.61	3.28	1864	0.29	1880	1.79	5.60	1873	0.38	1877	2.10	3.69	1884	0.35	1887
388, Spring Lake Villa															
389, Camp Floyd	0.27	0.35	1859	0.20	1860	0.63	1.14	1859	0.12	1860	0.50	0.72	1860	0.28	1859
390, Goshen	0.51	1.02	1882	0.00	1883	0.72	1.27	1882	0.17	1883	1.48	1.70	1883	1.26	1882
391, Nephi	0.69	0.86	1884	0.52	1885	2.93	3.70	1884	2.17	1885	1.29	2.15	1884	0.45	1885
391½, Fillmore	4.99	9.01	1878	2.12	1879	7.52	18.59	1878	1.23	1879	4.27	10.00	1878	0.15	1879
392, Frisco	0.35	0.54	1886	0.15	1887	0.53	0.86	1887	0.19	1886	0.37	0.46	1887	0.28	1886
393, Saint George	1.43	2.44	1865	0.85	1863	0.78	0.98	1862	0.43	1861	0.65	1.30	1869	0.01	1865
394, Harrisburgh	0.10	0.15	1870	0.05	1872	2.94	4.50	1872	0.95	1869	1.17	2.10	1870	0.10	1871
395, Mount Carmel	6.68	16.00	1874	1.05	1876	6.13	11.90	1878	4.00	1877	5.20	10.00	1877	0.50	1878
396, Kanab	1.47	3.30	1875	0.00	1879	1.69	3.55	1878	0.05	1879	0.56	1.75	1876	0.00	1879

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
377, Blue Creek	1.22	2.54	1882	0.12	1883	0.50	1.27	1885	0.00	1883	0.62	1.73	1885	0.00	1883
378, Promontory	1.21	4.37	1884	(T)	1883	0.59	1.42	1884	0.00	{1886 {1887	0.66	1.40	1885	0.00	1883
379, Corinne	1.18	2.50	1885	0.75	1886	0.86	3.46	1873	0.00	1886	0.64	2.75	1885	0.12	1873
380, Kelton	1.03	1.80	1884	0.05	1882	0.26	0.81	1884	0.00	{1882 1887}	0.48	1.42	1886	0.00	{1882 {1883
381, Terrace	0.61	1.74	1884	0.00	1881	0.48	1.12	1885	0.00	1881	0.40	1.23	1886	0.00	{1882 {1887
382, Logan															
383, Ogden	2.39	4.12	1885	0.47	1883	0.81	2.11	1883	0.00	1886	0.75	2.64	1885	(T)	1883
384, Coalville	1.20	2.60	1883	1.00	1877	1.30	3.09	1883	0.25	1879	0.71	2.40	1882	0.00	1879
385, Wanship											2.10		1867		
385½, Deep Creek	0.63	0.87	1880	0.09	1879	0.53	1.06	1878	(T)	1879	0.48	0.82	1878	0.15	1879
386, Camp Douglas	2.02	3.70	1879	0.05	1865	2.62	5.48	1869	0.00	1879	0.67	1.40	1882	0.01	1864
387, Salt Lake City	2.20	3.81	1882	0.19	1857	2.17	10.05	1873	0.06	1886	1.28	5.34	1866	0.01	1880
388, Spring Lake Villa															
389, Camp Floyd	0.60	0.80	1860	0.40	1859	0.65	1.24	1859	0.06	1860	0.20	0.39	1860	0.00	1859
390, Goshen	0.52	0.52	1883	0.23	1882	0.34	0.45	1883	0.23	1882	0.00	0.00	(1)	0.00	(2)
391, Nephi	4.51	6.30	1884	3.05	1883	1.96	2.70	1884	1.10	1883	0.76	1.67	1885	0.10	1883
391½, Fillmore	6.03	11.40	1878	1.69	1879	3.54	10.30	1878	0.00	1880	0.32	0.83	1878	0.02	1880
392, Frisco	0.84	1.53	1887	0.15	1886	0.10	0.19	1887	(T)	1886	0.01	0.02	1887	(T)	1886
393, Saint George	0.26	0.52	1865	0.04	1861	3.70	10.00	1869	0.00	1865	0.03	0.04	1861	0.01	1865
394, Harrisburgh	0.93	2.10	1871	0.10	1869	2.20	2.25	1870	2.15	1869	0.10				
395, Mount Carmel	2.14	4.40	1877	1.25	1878	3.05	6.25	1874	0.20	1876	0.03	0.08	1878	0.00	1874
396, Kanab	0.79	1.80	1878	0.06	1875	0.42	1.80	1872	0.00	{1876 {1879	0.46	2.10	1872	0.00	(1)

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

UTAH TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
377, Blue Creek	0.37	0.90	1882	0.00	1884, 1885	0.62	1.47	1881	0.00	1884, 1887	0.70	1.80	1884	0.07	1885
378, Promontory	0.16	0.60	1883	0.00	(2)	0.41	1.20	1881	0.00	1884	0.66	2.17	1884	0.00	1881
379, Corinne	0.21	0.65	1886	0.00	1882, 1883	0.62	1.75	1873	0.10	1882	0.64	2.90	1884	0.00	1883
380, Kelton	0.31	1.32	1887	0.00	1881, 1885	0.44	1.54	1885	0.00	1882	0.36	1.97	1884	0.00	1881, 1883
381, Terrace	0.09	0.29	1881	0.00	1885, 1887	0.07	0.34	1881	0.00	(1)	0.34	1.61	1884	0.00	(2)
382, Logan	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
383, Ogden	0.08	0.43	1887	0.00	(2)	0.33	0.62	1883	0.02	1881	0.83	2.41	1884	(T)	1883
384, Coalville	0.34	1.00	1881	0.00	(1)	0.67	1.90	1881	0.00	1875, 1877	0.35	0.98	1878	0.00	1880
385, Wanship	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
385½, Deep Creek	0.50	1.01	1878	0.00	1879	0.17	0.51	1880	0.00	1878, 1879	0.28	0.50	1877	(T)	1879
386, Camp Douglas	0.80	2.16	1876	0.02	1872	0.62	2.11	1874	0.00	1875	0.79	2.64	1878	0.00	1871, 1879
387, Salt Lake City	2.10	8.73	1866	0.00	1864, 1872	1.55	9.43	1867	0.06	1879	1.05	3.15	1878	0.01	1879
388, Spring Lake Villa	1.38	.....	.....	.....	.....	1.05	.....	.....	.....	.....	0.53	.....	.....	.....	.....
389, Camp Floyd	1.40	2.67	1859	0.00	1858	0.34	0.43	1858	0.18	1859	0.69	1.72	1859	0.17	1860
390, Goshen	0.00	0.00	(2)	0.00	(2)	0.00	0.00	(2)	0.00	(2)	0.30	0.57	1882	0 03	1881
391, Nephi	0.56	1.40	1883	0.02	1885	1.23	2.65	1885	0.35	1884	0.92	1.70	1884	0.15	1883
391½, Fillmore	0.64	1.27	1878	0.00	1879	0.87	1.62	1878	0.00	1877	0.48	1.90	1878	0.00	1877, 1879, 1880
392, Frisco	0.95	1.35	1886	0.15	1885	2.67	3.96	1885	0.54	1887	0.15	0.28	1887	0.07	1885
393, Saint George	0.62	1.03	1865	0.22	1864	0.66	1.17	1861	0.11	1864	0.53	0.98	1861	0.20	1865
394, Harrisburgh	2.67	3.60	1870	0.90	1869	0.65	0.80	1869	0.50	1871	0.30	.....	.....	.....	.....
395, Mount Carmel	1.08	3.25	1874	0.00	1877, 1878	1.75	4.25	1874	0.00	1877	0.58	1.50	1876	0.00	1877
396, Kanab	0.02	1.50	1876	0.00	1879	0.50	0.50	1876	0.00	1875, 1879	0.54	1.25	1875, 1876	0.00	1878

Name and number of station.	October.					November.				December.				Year.			
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	Average.	Maximum.		Minimum.	Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
377, Blue Creek	0.81	1.98	1882	0.00	1887	0.62	1.87	1885	0.00	1882	0.74	2.50	1884	0.00	1883	8.10	11.03	1882	2.95	1887
378, Promontory	0.60	1.42	1882	0.00	1885, 1887	0.76	2.12	1883	0.00	1887	0.62	1.40	1884	0.10	1886	8.19	14.67	1883	2.26	1887
379, Corinne	0.84	1.95	1883	0.00	1886, 1887	0.67	3.09	1885	0.05	1884	1.40	3.86	1873	0.25	1881, 1886	10.26	18.95	1884	7.07	1886
380, Kelton	0.16	0.57	1886	0.00	(1)	0.34	1.25	1886	0.00		0.87	3.35	1884	0.16	1883	6.07	11.74	1884	2.12	1882
381, Terrace	0.23	0.60	1883	0 00	1887	0.17	0.45	1883	0.00	1881, 1884	0.40	1.38	1884	0.03	1885	4.25	9.47	1884	1.08	1887
382, Logan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
383, Ogden	1.65	3.58	1882	0.15	1887	1.10	3.63	1885	0.00	1884, 1887	1.32	2.96	1884	0.25	1881	13.72	19.49	1884	8.31	1882
384, Coalville	1.54	3.66	1887	0.30	1875	1.51	4.92	1875	0.00	1878	1.28	2.00	1878	0.38	1874	15.17	21.02	1875	6.40	1879
385, Wanship	0.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.86	3.70	1867	0.38	1874	.....	.....	.....	.....	.....
385½, Deep Creek	0.18	0.19	1879	0.17	1878	0.32	0.40	1879	0.23	1878	0.26	0.55	1877	0.05	1878	4.77	.....	.....	.....	.....
386, Camp Douglas	1.57	3.60	1882	0.55	1871	1.33	4.54	1875	0.03	1868	2.36	5.10	1865	0.28	1878	18.16	28.00	1867	15.09	1872
387, Salt Lake City	1.74	3.75	1884	0.22	1859	1.55	5.87	1875	0.25	1887	2.06	6.39	1865	0.11	1878	21.20	38.20	1886	10.94	1880
388, Spring Lake Villa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
389, Camp Floyd	0.66	1.78	1858	0.00	1859	1.23	3.11	1859	0.09	1860	0.16	0.19	1859	0.14	1860	7.33	11.28	1859	4.83	1860
390, Goshen	0.37	0.55	1882	0.10	1881	0.58	0.70	1882	0.47	1881	0.14	0.19	1881	0.08	1882	4.96	.....	.....	.....	.....
391, Nephi	2.15	2.25	1883	2.05	1884	0.85	1.70	1883	0.00	1884	2.70	5.40	1884	2.00	1883	20.55	25.96	1884	13.72	1883
391½, Fillmore	0.09	0.26	1878	0.00	1877, 1879	0.24	0.42	1877	0.00	1879	1.21	3.00	1879	0.00	1877	30.20	66.70	1878	6.62	1879
392, Frisco	0.57	0.66	1886	0.46	1885	0.86	1.23	1886	0.39	1887	0.32	0.76	1887	0.05	1886	7.72	8.08	1886	7.10	1887
393, Saint George	1.26	1.36	1864	0.80	1865	0.50	1.03	1864	0.23	1861	1.12	1.30	1865	0.94	1864	11.57	.....	.....	.....	.....
394, Harrisburgh	0.10	.....	.....	.....	.....	1.92	3.15	1871	0.70	1869	0.06	0.10	1871	0.01	1869	13.14	.....	.....	.....	.....
395, Mount Carmel	7.12	18.75	1876	0.20	1877	2.25	4.50	1874	0.00	1876	0.70	1.40	1874	0.00	1876	36.71	58.05	1874	22.50	1876
396, Kanab	0.99	4.40	1876	0.00	1875, 1879	1.20	3.20	1875	0.00	1877	1.55	6.50	1872	0.00	1876, 1878	11.09	14.60	1876	7.37	1877

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

ARIZONA TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
397	Camp El Dorado	Mohave	35 40	114 50	.....	0 3	Apr., 1867	June, 1867	U. S. post hospital.
398	Camp Mojave (combined with Fort Mojave; elevation, 755 feet).	do	35 00	114 34	600	21 5	Aug., 1859	Oct., 1887	U. S. post hospital. Record much broken. Jan., 1861, to Sept., 1865, inclusive; May to Aug., 1866, inclusive; Nov., 1866, to Mar., 1867, inclusive; June to Dec., 1867, inclusive; Jan. to Mar., 1868, inclusive; Sept., Dec., 1882; Dec., 1886; Jan., Apr., 1887.
399	Camp Willow Grove.	Yavapai	35 10	112 57	.....	1 7	Feb., 1868	Sept., 1869	U. S. post hospital. Mar., 1869.
400	Camp Hualpai	do	34 52	112 50	5,321	2 11	Apr., 1870	June, 1873	U. S. post hospital. Record broken. Sept., Oct., 1870; July, 1871; Apr., 1873.
401	Camp Lincoln	do	34 52	111 35	3,500?	0 10	June, 1868	May, 1869	U. S. post hospital. July, Dec., 1868.
402	Camp Verde	do	34 34	111 53	3,500	17 8	Dec., 1868	Nov., 1887	U. S. post hospital and Signal Service.
403	Prescott (combined with Fort Whipple).	do	34 31	112 28	5,389	12 1	Dec., 1875	Dec. 1887	Signal Service.
404	Camp Skull Valley	do	34 30	112 45	5,000	0 4	Jan., 1867	Apr., 1867	U. S. post hospital.
405	Fort Whipple	do	34 29	112 30	5,700	20 7	June, 1865	Dec., 1887	Signal Service and U. S. post hospital. Record broken. July, 1865, to Aug., 1866, inclusive; Mar. to Aug., 1869, inclusive; Jan. to Apr., 1875, inclusive.
406	Camp Date Creek	do	34 20	112 55	3,726	6 3	May, 1867	July, 1873	U. S. post hospital.
407	Camp Keno	do	34 00?	111 00?	.....	0 2	Mar., 1868	Apr., 1868	Do.
408	Fort Apache	Apache	33 47	109 57	5,020	12 4	May, 1875	Nov., 1887	Signal Service and U. S. post hospital. Record broken. July, Aug., Sept., 1875.
409	Camp Colorado	Yuma	34 08	114 18	600?	2 0	Feb., 1869	Feb., 1871	U. S post hospital. Dec., 1870.
410	Yuma	do	33 42	114 30	141	12 2	Oct., 1875	Dec., 1887	Signal Service. Dec., 1883.
411	Camp La Paz	do	33 38	114 32	.....	0 5	Sept., 1874	Jan., 1875	U. S. post hospital.
412	Texas Hill	do	32 46	113 35	.....	6 1	July, 1881	Nov., 1887	Central Pacific R.R. Record broken. Jan., 1882; Nov., 1883; July, 1884; Nov., 1886; Dec., 1887.
413	Wickenburg	Maricopa	33 59	112 44	.....	8 5	Nov., 1875	Jan., 1886	Signal Service. Apr. to Aug., 1876, inclusive; May, 1882, to Sept., 1883, inclusive.
414	Fort McDowell	do	33 40	111 53	1,800	21 2	Sept., 1866	Dec., 1887	Signal Service and U. S. post hospital. Apr., Oct., 1868; June, 1886.
415	Phœnix	do	33 30	112 03	.....	11 1	Feb., 1876	June, 1887	Signal Service. Record broken. Jan., June, July, Aug., 1876; June, 1877.
416	Camp Reno	Gila	33 55	111 15	.....	1 0	Jan., 1869	Feb., 1870	U. S. post hospital. July, Aug., 1869.
417	San Carlos	do	33 12	110 25	.....	6 6	June, 1881	Dec., 1887	Signal Service. Nov., 1887.
418	Camp Goodwin	Graham	33 05	110 00	2,816	3 11	Jan., 1866	May, 1870	U. S. post hospital. Mar., May to Aug., inclusive, and Nov., 1866.
419	Camp Thomas	do	33 03	109 50	2,710	7 9	Apr., 1880	Dec., 1887	Signal Service.
420	Camp Grant (combined with Fort Grant; elevation, 4,914 feet).	do	33 25	109 23	985	19 7	Sept., 1866	Dec., 1887	U. S. post hospital and Signal Service. Record broken. Apr., June to Sept., 1867, inclusive; Nov., 1867, to Mar., 1868, inclusive; Nov., Dec., 1868; Apr., May, June, 1869; July, Aug., Sept., 1871; June, July, 1886.
421	Maricopa	Pinal	33 10	112 61	.....	8 1	Nov., 1875	July, 1887	Signal Service. Record broken. Mar., 1878, to June, 1881, inclusive; Oct., Dec., 1881; Oct., 1883.
422	Florence	do	33 02	111 22	.....	6 6	Nov., 1875	Apr., 1882	Signal Service.
423	Casa Grande	do	32 56	111 43	.....	5 8	July, 1881	Nov., 1887	Central Pacific R.R. Record broken. Aug., Dec., 1881; Jan., 1882; Jan., Feb., 1883; Feb., June, 1884; Feb., 1886; Dec., 1887.
424	Camp Magollan	do	32 54	110 40	.....	0 1	Aug., 1870	.....	U. S. post hospital.
425	Fort Lowell	Pima	32 17	110 48	2,000	14 8	May, 1867	Jan., 1887	U. S. post hospital. Record broken. Oct., Nov., 1867; Dec., 1871, to June, 1874, inclusive; Aug., 1881; May to Sept., 1883, inclusive; May to Sept., 1884; Nov., 1884, to Feb., 1886, inclusive.
426	Tucson	do	32 15	110 52	.....	12 6	May, 1867	May, 1883	Signal Service.
427	Pantano	do	31 59	110 32	.....	5 9	July, 1881	Oct 1887	Central Pacific R.R. Record broken. Aug., 1881; May, 1883; June, 1884; Dec., 1886, to Feb., 1887, inclusive; May, Nov., Dec., 1887.

ARIZONA TERRITORY—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
428	Fort Buchanan	Pima	31 43	110 55	5,330	3 10	Aug., 1857	June, 1861	U. S. post hospital. May, 1860.
429	Camp Crittenden	do	31 43	110 40	.....	4 6	Apr., 1868	Dec., 1872	U. S. post hospital. Nov., 1838; Aug., Sept., 1872.
430	Tubac	do	31 40	110 58	3,000	0 5	Oct., 1867	Feb., 1868	U. S. post hospital.
430½	Fort Huachuca	do	31 33	110 13	5,306	1 9	Jan., 1886	Nov., 1887	Do.
431	Wilcox	Cochise	32 15	109 47	.....	6 0	July, 1881	Dec., 1887	Signal Service. Record broken. Sept., 1881; Jan., June, 1882; May, 1885; Jan., Feb., 1886.
432	San Simon	do	32 14	109 08	.....	5 2	July, 1882	Nov., 1887	Central Pacific R. R. May, 1883; July, Nov., 1886.
433	Fort Bowie	do	32 10	109 22	4,826	19 5	Aug., 1867	Dec., 1887	U. S. post hospital. Signal Service. Record broken. Dec., 1870, to Apr., 1871; Nov., 1871, to Feb., 1872, inclusive; Jan., 1878; Jan., 1881; Oct., 1882.
434	Benson	do	31 59	110 18	.....	6 0	Aug., 1881	Nov, 1887	Central Pacific R. R. May, 1883; June, Nov., 1884.
435	Camp Wallen	do	31 35	109 58	.....	2 8	Dec., 1866	Sept., 1869	U. S. post hospital. Oct., Nov., 1868.
436	Fort Defiance	Navajoe Indian Reservation.	35 43	109 10	.....	8 8	May, 1852	Mar., 1861	U. S. post hospital.

ARIZONA TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
397, Camp El Dorado†															
398, Camp Mojave	0.45	1.90	'75 '76	0.00	(1)	0.87	5.00	1874	0.00	(1)	0.21	0.92	1886	0.00	(1)
399, Camp Willow Grove	0.48	0.48	1869	0.48	1869	0.88	1.15	1869	0.61	1868	0.42	0.42	1868	0.42	1868
400, Camp Hualpai	0.07	0.10	'72 '73	0.00	1871	1.92	4.65	1873	0.40	1871	0.00	0.00	(2)	0.00	(2)
401, Camp Lincoln	17.05					3.95					12.30				
402, Camp Verde	0.84	2.91	1875	0.00	'72 '85	0.91	3.59	1884	0.00	1871	1.00	3.60	1884	0.00	'73 '79
404, Camp Skull Valley	3.11					1.11					3.09				
405, Fort Whipple	1.40	5.09	1886	0.00	'70 '73	1.82	6.55	1884	0.01	1876	1.62	8.00	1867	0.00	1882
406, Camp Date Creek	0.79	3.12	1868	0.00	'72 '73	1.35	2.85	1869	0.70	1870	0.82	2.86	1869	0.00	'71 '72
407, Camp Keno											4.00				
408, Fort Apache	1.18	3.90	1886	0.18	1878	1.83	3.43	1884	0.94	1877	1.59	4.44	1884	0.03	1879
409, Camp Colorado	0.15	0.30	1870	0.00	1871	0.07	0.21	1869	0.00	'70 '71	0.25	0.50	1869	0.00	1870
410, Yuma	0.37	1.35	1882	0.00	(1)	0.48	1.72	1877	0.00	1881	0.20	1.48	1884	0.00	(1)
411, Camp La Paz	0.65														
412, Texas Hill	0.27	0.93	1886	0.00	'85 '87	0.52	1.81	1884	0.00	1882	0.33	1.75	1884	0.00	(1)
413, Wickenburg	1.07	2.73	1876	(T)	1885	1.10	4.21	1884	0.00	1881	0.80	3.67	1884	0.00	1882
414, Fort McDowell	0.99	3.35	1886	0.00	(1)	1.29	4.37	1884	0.00	1881	0.76	3.47	1884	0.00	(1)
415, Phœnix	0.53	1.62	1882	0.00	(1)	0.88	2.46	1884	0.17	1882	0.70	2.14	1884	0.00	1882
416, Camp Reno	2.46					2.76					0.88				
417, San Carlos	1.13	2.88	1886	(T)	1887	1.77	3.83	1884	0.93	1882	1.22	3.97	1884	0.00	1887
418, Camp Goodwin	2.41	7.55	1867	0.20	1870	1.82	2.62	1866	0.58	1868	1.04	1.87	1867	0.02	1870
419, Camp Thomas	0.62	2.16	1886	0.03	'81 '85	1.27	2.94	1884	0.13	1881	1.09	3.21	1884	0.00	1887
420, Camp Grant	0.89	2.48	1875	0.00	1873	1.20	4.62	1884	0.10	1873	1.01	3.87	1884	0.40	1872
421, Maricopa	0.44	1.32	1886	0.00	(1)	0.60	1.65	1886	0.00	1876	0.67	2.83	1884	(T)	1887
422, Florence	0.82	2.28	1882	0.00	1881	0.68	1.15	1878	0.00	1876	0.67	1.98	1881	(T)	1882
423, Casa Grande	0.41	0.90	1886	0.00	'85 '87	0.23	0.40	1887	0.00	1882	0.32	1.08	1884	0.00	(1)
425, Fort Lowell	1.05	4.74	1884	0.00	1887	1.25	5.23	1884	0.00	1880	0.72	2.90	1884	0.00	1875
426, Tucson	0.71	2.02	1879	0.20	1870	0.85	2.50	1877	0.15	1870	0.69	1.77	1878	0.03	1870
427, Pantano	1.11	2.02	1882	0.00	1885	1.40	2.80	1882	0.41	1883	0.75	1.61	1883	0.00	1887
428, Fort Buchanan	1.47	2.35	1860	0.54	1859	2.01	2.92	1860	0.51	1858	0.20	0.47	1860	0.00	'58 '61
429, Camp Crittenden	0.68	1.10	1869	0.31	1872	1.15	2.50	1869	0.19	1872	0.70	1.13	1870	0.00	1872
430, Tubac	0.81					0.29									
430½, Fort Huachuca	0.59	1.18	1886	0.00	1887	0.97	1.94	1886	1.30	1887	0.10	0.20	1886	0.00	1887
431, Wilcox	0.52	1.25	1883	(T)	1887	1.11	1.83	1887	0.31	1883	0.77	1.75	1884	0.00	'82 '87
432, San Simon	0.22	0.50	1883	0.01	1887	0.40	0.78	1887	0.05	1885	0.65	2.21	1884	0.00	'86 '87
433, Fort Bowie	1.27	4.24	1886	0.00	1873	2.00	5.40	1874	0.20	1881	1.20	4.48	1886	0.00	(1)
434, Benson	0.35	0.70	1886	0.00	1887	0.74	1.20	1882	0.34	1887	0.57	2.08	1883	0.00	'82 '87
435, Camp Wallen	2.43	4.60	1867	1.10	1868	1.59	2.30	1867	0.50	1868	0.52	0.67	1869	0.30	1868
436, Fort Defiance	0.89	2.86	1860	0.02	1859	0.56	1.71	1855	0.03	1861	0.68	3.30	1855	0.00	1867

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
397, Camp El Dorado	0.00					0.00					0.00				
398, Camp Mojave	0.35	4.05	1871	0.00	(1)	0.14	1.20	1873	0.00	(2)	0.60	1.00	1872	0.00	(2)
399, Camp Willow Grove	0.59	1.02	1869	0.16	1868	0.20	0.28	1868	0.12	1869	0.03	0.07	1869	0.00	1868
400, Camp Hualpai	1.62	1.97	1871	0.07	1870	0.63	1.18	1870	0.10	1871	1.28	3.60	1872	0.00	1871
401, Camp Lincoln	3.99					0.27					0.33				
402, Camp Verde	0.63	1.75	1878	0.00	1873	0.24	1.70	1877	0.00	(1)	0.26	1.35	1882	0.00	(1)
404, Camp Skull Valley	0.30														
405, Fort Whipple	1.05	2.86	1878	0.03	1879	0.62	1.82	1877	0.00	(1)	0.19	1.24	1872	0.00	(1)
406, Camp Date Creek	0.87	2.05	1872	0.00	1870	0.13	0.63	1868	0.00	(1)	0.24	1.49	1869	0.00	(2)
407, Camp Keno	2.70														
408, Fort Apache	0.83	1.77	1878	0.08	1876	0.49	1.31	1884	0.30	(1)	0.81	3.27	1882	(T)	1881
409, Camp Colorado	0.08	0.15	1869	0.00	1870	0.02	0.05	1870	0.00	1869	0.00	0.00	'69 '70	0.00	'69 '70
410, Yuma	0.11	0.55	1881	0.00	(1)	0.04	0.44	1884	0.00	(1)	(T)	0.05	1882	0.00	(2)
411, Camp La Paz†															
412, Texas Hill	0.08	0.23	1884	0.00	(1)	0.05	0.28	1884	0.00	(2)	0.00	0.00	(2)	0.00	(2)
413, Wickenburg	0.52	1.24	1884	0.13	1879	0.30	0.64	1884	0.00	'79 '80	0.02	0.06	1884	0.00	(1)
414, Fort McDowell	0.41	3.20	1878	0.00	(1)	0.13	1.04	1877	0.00	(2)	0.14	1.00	1876	0.00	(2)
415, Phœnix	0.33	1.25	1878	0.00	(1)	0.11	0.65	1885	0.00	(1)	0.10	0.49	1880	0.00	(1)
416, Camp Reno	0.03					0.00					0.50				
417, San Carlos	0.21	0.84	1884	0.00	'82 '83	0.31	0.71	1882	0.00	1886	0.34	1.09	1882	0.00	(1)
418, Camp Goodwin	1.30	2.67	1866	0.00	1867	0.00	0.01	1867	0.00	(1)	0.69	2.06	1869	0.00	'67 '68
419, Camp Thomas	0.26	0.72	1884	0.00	1883	0.59	2.73	1887	0.00	'80 '86	0.36	1.26	1882	0.00	(1)
420, Camp Grant	0.60	3.11	1871	0.00	'73 '76	0.27	1.16	1883	0.00	(1)	0.67	1.47	1882	0.00	(1)
421, Maricopa	0.14	0.51	'84 '87	0.00	'76 '85	0.11	0.41	1877	0.00	'76 '86	0.10	0.45	1876	0.00	'77 '86
422, Florence	0.42	1.55	1878	0.00	1877	0.07	0.31	1877	0.00	(1)	0.02	0.07	1876	0.00	(1)
423, Casa Grande	0.06	0.30	1887	0.00	(2)	0.07	0.24	1883	0.00	(2)	0.08	0.40	1887	0.00	(2)
425, Fort Lowell	0.28	1.09	1868	0.00	(1)	0.06	0.42	1877	0.00	(2)	0.35	2.05	1876	0.00	(1)
426, Tucson	0.26	1.09	1868	0.00	'69 '76	0.07	0.41	1877	0.00	(2)	0.21	0.99	1882	0.00	(2)
427, Pantano	0.06	0.30	1886	0.00	(2)	0.28	0.60	1882	0.00	1886	0.53	0.99	1885	0.00	1886
428, Fort Buchanan	0.60	1.46	1858	0.00	1861	0.18	0.55	1861	0.00	'57 '58	0.82	1.96	1861	0.20	1859
429, Camp Crittenden	0.26	0.39	1868	0.00	1869	0.05	0.20	1871	0.00	(2)	0.31	0.68	1872	0.00	1868
430, Tubac†															
430½, Fort Huachuca	(T)	(T)	1886	0.00	1887	0.00					0.36	0.72	1877	0.00	1886
431, Wilcox	0.01	0.03	'85 '87	0.00	(1)	0.16	0.48	1887	0.00	(1)	0.22	0.47	1887	(T)	1886
432, San Simon	0.02	0.10	1887	0.00	(2)	0.11	0.34	1884	0.00	'86 '87	0.02	0.08	1884	0.00	(2)
433, Fort Bowie	0.19	1.00	1878	0.00	(1)	0.29	1.50	1883	0.00	(1)	0.76	4.21	1886	0.00	(1)
434, Benson	(T)	(T)	'84 '87	0.00	(2)	0.02	0.08	1887	0.00	(2)	0.35	0.86	1882	0.00	'86 '87
435, Camp Wallen	0.25	0.50	1868	0.00	1867	0.03	0.10	1868	0.00	'67 '69	0.03	0.05	1869	0.00	1867
436, Fort Defiance	0.67	1.64	1858	0.02	1860	0.52	1.51	1854	0.00	'58 '60	0.74	2.35	1852	0.10	1856

403, *See* Fort Whipple. 424, No data. † No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

ARIZONA TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
398, Camp Mojave	0.32	1.80	1881	0.00	(1)	0.69	3.80	1873	0.00	(2)	0.10	0.83	1876	0.00	(1)
399, Camp Willow Grove	3.05	4.67	1868	1.43	1869	2.37	2.73	1868	2.01	1869	0.07	0.14	1868	0.00	1869
400, Camp Hualpai	3.60	4.91	1870	2.30	1872	7.02	6.40	1872	2.80	1871	3.15	4.10	1871	2.20	1872
401, Camp Lincoln						1.79					1.27				
402, Camp Verde	0.73	5.31	1876	0.07	1869	3.08	12.08	1876	0.26	1871	1.06	4.72	1887	0.00	(2)
404, Camp Skull Valley†															
405, Fort Whipple	3.13	7.98	1870	0.61	1881	3.03	6.34	1878	0.24	1877	1.16	4.88	1887	0.00	(1)
406, Camp Date Creek	3.19	7.24	1868	0.36	1873	3.78	8.30	1868	0.84	18.1	0.29	0.93	1868	0.00	(2)
407, Camp Kenot															
408, Fort Apache	4.22	5.83	1880	0.14	1884	4.58	9.33	1878	1.20	1877	1.68	5.41	1881	0.44	1885
409, Camp Colorado	0.03	0.06	1870	0.00	1869	0.25	0.30	1869	0.20	1870	0.00	0.00	(1)	0.00	(1)
410, Yuma	0.15	0.55	1878	0.00	(1)	0.45	2.23	1886	0.00	(1)	0.15	1.09	1887	0.00	(1)
411, Camp La Paz											0.00				
412, Texas Hill	0.12	0.68	1883	0.00	(1)	0.67	2.25	1885	0.00	1884	0.43	2.89	1887	0.00	(2)
413, Wickenburg	0.81	2.29	1880	0.09	1878	1.99	5.02	1881	0.05	1877	0.66	1.16	1881	0.04	1885
414, Fort McDowell	1.32	9.16	1872	0.00	(2)	1.60	7.17	1872	0.06	1877	1.03	4.11	1887	0.00	(1)
415, Phœnix	0.76	2.40	1878	0.05	1886	1.02	2.19	1881	0.02	1877	0.62	1.50	1884	0.07	1885
416, Camp Reno											0.02				
417, San Carlos	1.82	4.13	1881	0.03	1886	2.94	6.05	1882	1.11	1883	0.79	1.94	1881	0.11	1883
418, Camp Goodwin	3.35	3.39	1868	3.20	1869	6.78	14.45	1869	2.16	1868	3.80	10.40	1866	0.02	1869
419, Camp Thomas	1.87	4.18	1881	0.10	1886	2.63	4.02	1886	2.04	1884	1.04	3.87	1887	(T)	1883
420, Camp Grant	3.37	9.00	1887	0.67	1884	3.59	7.41	1876	1.08	1875	1.93	4.65	1868	0.00	(1)
421, Maricopa	0.36	1.26	1877	0.16	1886	0.95	1.29	1876	0.08	1886	0.36	1.10	1884	(T)	1885
422, Florence	1.59	4.53	1876	0.00	1877	2.05	4.28	1881	0.13	1877	1.06	2.75	1878	0.26	1876
423, Casa Grande	0.31	1.07	1887	0.00	(1)	1.03	2.37	1844	0.00	1882	0.28	1.99	1887	0.00	(1)
424, Camp Magollan						0.13									
425, Fort Lowell	2.44	4.83	1876	(T)	1886	2.78	7.88	1878	0.34	1877	1.20	3.83	1868	0.00	(1)
426, Tucson	2.90	5.72	1878	0.84	1879	2.74	6.32	1882	0.02	1877	1.21	3.83	1868	0.00	(1)
427, Pantano	1.59	4.51	1882	(T)	1882	2.87	5.74	1882	1.63	1885	1.50	3.30	1881	0.00	1882
428, Fort Buchanan	5.25	9.24	1859	3.21	1858	6.16	10.60	1857	3.50	1858	2.03	4.76	1857	0.74	1859
429, Camp Crittenden	6.01	11.72	1868	3.17	1872	4.88	5.55	1870	4.07	1868	0.94	1.55	1869	0.40	1868
430, Tubac†															
430½, Fort Huachuca	2.74	4.08	1887	1.41	1886	4.24					2.47	3.48	1887	1.46	1886
431, Wilcox	1.63	3.97	1881	0.11	1882	3.81	5.31	1887	1.54	1884	1.50	2.96	1887	0.04	1883
432, San Simon	0.61	1.25	1883	0.00	1887	1.64	3.60	1882	0.00	1887	0.62	2.24	1886	(T)	1885
433, Fort Bowie	3.35	7.90	1871	0.50	1873	3.09	7.44	1878	0.18	1877	1.31	3.19	1875	0.01	1873
434, Benson	1.53	2.97	1883	0.58	1885	2.50	4.33	1881	0.27	1884	0.75	2.92	1887	0.10	1883
435, Camp Wallen	5.32	7.90	1868	1.40	1869	4.90	8.60	1869	2.50	1867	0.90	2.00	1868	0.20	1867
436, Fort Defiance	2.46	5.77	1860	0.90	1852	2.73	5.24	1854	0.30	1860	1.86	3.47	1854	0.49	1860

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
398, Camp Mojave	0.19	2.00	1874	0.00	(1)	0.39	2.00	1874	0.00	(1)	0.73	5.69	1884	0.00	(1)	5.04	11.60	1874	2.23	1860
399, C'mp Willow Gr.	0.33	0.33	1868	0.33	1868	0.23	0.23	1868	0.23	1868	0.35	0.35	1868	0.35	1869	9.00				
400, Camp Hualpai	0.45	0.60	1871	0.30	1872	0.28	0.50	1872	0.00	1871	0.87	1.70	1872	0.20	1871	20.89				
401, Camp Lincoln	0.58					1.08														
402, Camp Verde	0.48	2.10	1876	0.00	(1)	0.97	4.04	1869	0.00	(1)	1.24	4.66	1884	0.00	(1)	11.44	17.72	1884	4.80	1871
404, Camp Skull V'y†																				
405, Fort Whipple	0.56	1.59	1870	0.00	(1)	0.72	2.46	1885	0.00	(1)	1.53	5.58	1884	0.00	(1)	16.83	27.13	1874	10.02	1880
406, Camp Date Cr'k	0.46	1.50	1870	0.00	1869	0.64	1.90	1869	0.00	(1)	1.20	4.09	1867	0.06	1871	13.76	27.84	1868	13.60	1870
407, Camp Kenot																				
408, Fort Apache	1.45	4.68	1881	0.00	(1)	0.99	2.34	1882	0.02	1883	1.67	5.52	1884	0.22	1876	21.34	31.12	1881	12.41	1877
409, Camp Colorado	0.30	0.50	1870	0.10	1869	0.50	1.00	1869	0.00	1870	0.20	0.20	1869	0.20	1869	1.85	2.61	1869	1.31	1870
410, Yuma	0.12	1.11	1886	0.00	(1)	0.36	2.43	1887	0.00	(2)	0.38	1.96	1884	0.00	(1)	2.81	5.86	1884	0.74	1880
411, Camp La Paz	0.20					1.30					0.00									
412, Texas Hill	0.59	2.51	1881	0.00	(1)	0.30	1.40	1887	0.00	(1)	0.42	1.31	1884	0.00	(1)	3.78	5.62	1884	2.31	1885
413, Wickenburg	0.18	0.58	1876	0.00	(1)	0.51	1.09	1879	0.00	(1)	1.87	5.27	1883	0.00	1876	9.83	17.17	1884	6.35	1877
414, Fort McDowell	0.26	1.38	1884	0.00	(1)	0.81	2.76	1874	0.00	(1)	1.80	5.70	1867	0.00	(1)	10.54	20.01	1872	4.94	1871
415, Phœnix	0.27	1.12	1884	0.00	1878	0.42	1.66	1879	0.00	(1)	0.89	3.36	1883	0.00	(1)	6.63	12.83	1884	3.77	1885
416, Camp Reno	1.00					3.50					0.70									
417, San Carlos	0.63	1.49	1884	0.00	1882	0.56	1.58	1882	0.00	1883	1.64	5.48	1884	0.00	1886	13.36	20.41	1884	8.19	1885
418, Camp Goodwin	1.39	3.70	1866	0.50	1868	1.19	2.40	1867	0.41	1869	2.81	5.20	1867	0.60	1868	26.58	27.93	1867	16.00	1868
419, Camp Thomas	0.40	1.12	1886	0.00	1882	0.84	0.77	1882	0.00	1883	0.27	5.16	1884	0.04	1886	10.74	18.16	1884	8.66	1882
420, Camp Grant	0.73	3.06	1884	0.00	(1)	0.89	3.38	1873	0.00	(1)	1.50	5.93	1884	0.09	1886	16.65	25.67	1884	8.95	1870
421, Maricopa	0.34	1.51	1884	0.00	1885	0.16	0.56	1885	0.00	1883	0.85	2.97	1884	0.00	(1)	5.08	11.96	1884	0.38	1882
422, Florence	0.72	1.29	1879	0.00	1878	0.47	1.37	1878	0.00	(1)	1.04	2.02	1877	0.00	1876	9.61	13.49	1878	5.35	1880
423, Casa Grande	0.34	1.31	1884	0.00	(1)	0.27	1.28	1887	0.00	(2)	0.81	3.20	1884	0.00	(2)	4.21	8.71	1884	2.02	1885
424, Camp Magollan†																				
425, Fort Lowell	0.06	2.65	1876	0.00	(1)	0.52	2.80	1878	0.00	(1)	0.88	3.18	1883	0.00	1876	11.59	14.69	1869	6.21	1870
426, Tucson	0.34	1.08	1874	0.00	(1)	0.49	1.70	1867	0.00	(1)	0.99	3.31	1879	0.00	1876	11.46	16.66	1878	6.61	1880
427, Pantano	0.95	2.80	1884	0.00	(1)	0.42	1.15	1882	0.00	(1)	1.09	4.70	1884	0.00	(1)	12.53	13.86	1882	8.96	1885
428, Fort Buchanan	1.16	2.33	1859	0 60	1858	1.09	2.84	1859	0.00	1857	1.15	2.58	1858	0.40	1859	22.12	25.82	1859	16.08	1858
429, C'mp Crittenden	0.23	0.46	1869	0.00	1870	0.37	1.01	1869	0.00	(1)	1.81	3.76	1872	0.40	1871	17.39	19.08	1869	15.53	1871
430, Tubac	0.00					0.35					2.57									
430½, Ft. Huachuca	0.79	0.84	1886	0.74	1887	0.58	1.16	1887	(T)	1886	0.20					13.04				
431, Wilcox	0.78	3.59	1884	0.00	(1)	1.24	4.25	1884	0.00	(1)	1.17	3.49	1884	0.00	1881	12.92	18.38	1884	16.49	1867
432, San Simon	0.30	1.63	1884	0.00	(1)	0.13	0.35	1883	0.00	(1)	0.40	1.03	1884	(T)	1885	5.12				
433, Fort Bowie	0.57	3.58	1884	0.00	(1)	0.74	1.79	1882	0.00	(1)	1.34	6.41	1884	0.00	(1)	16.11	25.20	1884	9.63	1873
434, Benson	0.59	2.89	1884	0.00	(1)	0.22	0.80	1882	0.00	(1)	0.70	2.50	1884	0.15	1882	8.32				
435, Camp Wallen	0.00	0.00	1867	0.00	1867	0.00	0.00	1867	0.00	1867	2.93	7.90	1868	0.00	1866	18.90	24.53	1868	17.76	1867
436, Fort Defiance	0.70	1.73	1857	0.00	(1)	1.16	4.30	1857	0.15	1860	0.87	1.59	1855	0.23	1859	13.84	22.44	1854	11.63	1856

397, No data. 403, *See* Fort Whipple. † No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

COLORADO.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
437	Fort Collins	Routt	40 38	105 05	5,000	6 1	Nov., 1872	Aug., 1887	R. Q. Tenney; Charles F. Davis. Record broken. May, Dec., 1873; Feb., Sept., Nov., 1874; years 1875, 1876, 1877, 1878; Jan. to Sept., inclusive, 1879; Jan., Nov., 1880; Apr. to Dec., inclusive, 1881; Jan., Feb., Dec., 1882; Apr., May, July, 1883; June to Sept., inclusive, 1884; Feb. to Dec., inclusive, 1885; Jan. to Sept., inclusive, 1886; Feb. and Mar., 1887; Sept. to Dec., inclusive, 1887.
438	Estes Park	Larimer†	40 28	105 29		0 4	Jan., 1876	Apr., 1876	A. Q. McGregor.
439	Fort Sedgwick	... do	41 00	102 30	3,660	2 1	Nov., 1867	Apr., 1871	U. S. post hospital. Record broken. Mar. to Dec., inclusive, 1868; Jan., Feb., Apr., May, June, Sept., Nov., 1869.
440	Fort Morgan	....do	40 18	103 45	4,500	1 0	Dec., 1866	Apr., 1868	U. S. post hospital. Record broken, Feb., Mar., Nov., Dec., 1867; Jan., 1868.
441	Akron	Logan†	40 09	103 12		0 1	Aug., 1887		Colorado State Weather Service.
442	Walden	Washington	40 45	106 15		0 1	Aug., 1887		Do.
443	Hot Sulphur Springs.	Grand	40 05	106 10		1 10	June, 1874	Mar., 1876	William N. Byers.
444	Golden City	Garfield	39 44	105 18	5,240	5 0	May, 1860	Aug., 1887	J. McDonald, M. S. Blounte, E. L. Berthoud, G. W. Davies, H. J. Fresch. Nov., Dec., 1860; years 1860 to 1871; Sept. to Dec., 1871, inclusive; Jan. to Apr., inclusive, Aug., Dec., 1872; Jan., Feb., Oct., Nov., 1873; May to Sept., inclusive, and Dec., 1874.
445	McGregor Ranch	Boulder	40 22	105 27		0 4	Jan., 1876	Apr., 1876	A. Q. McGregor.
446	Denver	Arapahoe	38 30	105 00	5,250	18 1	Dec., 1869	Dec., 1887	W. N. Byers, S. T. Sopris, Signal Service.
447	Mountain City	Eagle† Summit†	39 50	105 30		0 5	Oct., 1860	Apr., 1861	Dr. W. T. Ellis. Jan., 1861.
448	Hutchinson	Gilpin	39 31	105 16		1 0	Jan., 1875	Dec., 1875	J. C. Stanton.
449	Idaho Springs	Jefferson	39 43	105 32	7,500	0 7	Aug., 1886	Aug., 1887	Colorado State Weather Service. Record broken. Nov. and Dec., 1886; Jan. to Apr., 1887, inclusive.
450	Georgetown	Clear Creek	39 42	105 42	8,500	1 9	Oct., 1878	Aug., 1887	W. R. Bradley. Record broken. Nov., 1878; June, July, Sept. to Dec., 1879, inclusive; years from 1879 to 1885, inclusive; Jan. to July, 1886, inclusive.
451	Montgomery	Park	39 20	106 08	11,000	0 6	Dec., 1863	May, 1864	J. Luttrell.
452	Alma	....do	39 18	106 05	10,320	0 11	Aug., 1886	June, 1887	Colorado State Weather Service.
453	Hugo	Douglas† Elbert	39 07	103 25	5,060	0 3	Aug., 1886	Oct., 1886	Do.
454	Ranch near Sanborn.	....do	38 42	103 48	4,750	0 1	May, 1886		Do.
455	Grand Junction	Mesa	39 05	108 30		1 0	Apr., 1884	Dec., 1887	Frank McClintock. Record broken. May, June, Oct., Nov., Dec., 1884; 1885 and 1886; Jan. to Apr., 1887, inclusive.
456	Whitewater	....do	39 00	108 30		0 4	Feb., 1887	May, 1887	Colorado State Weather Service.
457	T. S. Ranch	....do	38 02	108 08		0 2	June, 1887	Aug., 1887	Colorado State Weather Service. July, 1887.
458	Gunnison	Pitkin† Lake† Gunnison	38 34	106 52		0 1	Mar., 1884		Dr. J. L. Bennett.
459	Husted	Delta† El Paso	39 00	104 50	6,550	0 11	May, 1886	Aug., 1887	Colorado State Weather Service. Broken record. Dec., 1886; Jan. to Apr., 1887, inclusive.
460	Templeton Gap	....do	38 58	105 09	6,300	0 6	Feb., 1871	Aug., 1871	A. M. Merrimann. June, 1871.
461	Colorado Springs	... do	38 52	104 45	6,010	7 7	Dec., 1871	Dec., 1887	Signal Service. F. H. Loud, E. Copley, E. S. Nettleton. Dec., 1873; Aug. to Dec., 1876, inclusive; Jan. to Oct., 1877, inclusive; Feb., Mar., May to Dec., 1878, inclusive; years 1879 to 1882, inclusive; June to Dec., 1883, inclusive; Jan., 1884; Jan., Feb., and June to Dec., 1885, inclusive.

† No data.

COLORADO—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	Record. From—	Record. To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
462	Pikes' Peak	El Paso	38 50	105 02	14,134	14 1	Nov., 1873	Nov., 1887	Signal Service. Dec., 1887.
463	Seven Lakes	do	38 45	104 58	11,000	0 2	Aug., 1886	Sept., 1886	Colorado State Weather Service.
464	Fountain	do	38 41	104 40	5,400	2 3	Nov., 1871	Feb., 1875	C. J. Croft. Record broken. Jan., May, June, Oct., and Nov., 1872; Jan., June, Dec., 1873; Jan. to Mar., inclusive, Aug., Sept., 1874.
465	Salida	Chaffee	38 32	105 58	7,050	7	Feb., 1886	Sept., 1886	C. B. Underhill. Aug., 1886.
466	Las Animas	Bent	38 05	103 07	3,899	19 0	Jan., 1869	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Jan. and Oct., 1869; Nov., 1874; Jan. to Mar., inclusive, and Nov., 1875; Mar., Apr., Nov., Dec., 1876; Jan., 1877; Mar., Dec., 1879; Jan., Mar., Apr., Dec., 1880; Jan., Feb., Sept., Oct., Dec., 1881.
466	Fort Lyon	do	38 06	103 08	4,000 ?				
466½	Kit Carson	do	38 44	102 13	.....	2 3	Aug., 1877	May, 1880	Signal Service.
467	Montrose	Montrose	38 30	107 56	5,780	2 11	Feb., 1885	Dec., 1887	Do.
468	Carson City	Fremont	38 30	105 00	4,700	0 1	Dec., 1869	.....	T. Macon.
469	South Pueblo	Pueblo	38 16	104 37	4,732	8 9	Sept., 1872	Aug., 1887	E. S. Nettleton. Record broken. Oct., 1872; Nov., Dec., 1873; Mar., May, and Aug., 1874; May, 1875; Jan., Apr., July, and Aug., 1876; Dec., 1877; years 1879 to 1882, inclusive; Jan. to Sept., 1883, inclusive; Sept. to Dec., 1886, inclusive; Jan., July, and Sept. to Dec., 1887, inclusive.
470	Fort Reynolds	do	38 15	104 12	4,300	3 0	Jan., 1869	Mar., 1872	U. S. post hospital. Record broken. Feb., Mar., and Apr., 1869; Dec., 1871.
471	Saguache	Saguache	38 06	106 10	7,740	0 9	Sept., 1886	Aug., 1887	Colorado State Weather Service. Record broken. Dec., 1886; May, July, 1887.
472	Pandora	Ouray	38 03	107 40	8,700	0 6	Aug., 1886	July, 1887	Colorado State Weather Service. Record broken. Nov., 1886; Jan. to May, 1887, inclusive.
473	Ula	Custer	38 12	105 29	.....	0 2	May, 1875	June, 1875	Erich Richler.
474	Westcliffe	do	38 07	105 28	7,800	0 8	Apr., 1886	July, 1887	Colorado State Weather Service. Record broken. July, Aug., Oct., 1886; Feb. to June, 1887, inclusive.
475	Fort Massachusetts.	San Miguel.† Hinsdale.† Huerfano	37 32	105 23	.....	5 1	Oct., 1852	July, 1858	U. S. post hospital. Record broken. Oct., Nov., and Dec., 1853; Jan. to Apr., inclusive, Nov., 1854; Aug., 1855; Aug. to Dec., 1858, inclusive.
476	Silverton	San Juan	37 47	107 37	9,400	1 7	Apr., 1875	Feb., 1887	A. N. Fuller. Record broken. Aug., Sept., 1875; July to Dec., 1876, inclusive; years 1876 to 1885, inclusive; Jan. to Sept., 1886, inclusive.
477	Monte Vista	Dolores.† Rio Grande	37 37	106 02	7,200	0 10	Aug., 1886	Aug., 1887	Colorado State Weather Service. Record broken. Dec., 1886; Feb., May, 1887.
478	Summit	do	37 28	106 30	.....	3 7	Aug., 1876	Oct., 1880	Charles E. Robins. Record broken. Oct., Nov., Dec., 1879; Jan. to May, 1880, inclusive.
479	Trinidad	Las Animas	37 07	104 30	6,070	3 6	Aug., 1877	Feb., 1881	C. B. Park.
480	Fort Garland	Castilla	35 25	105 25	8,365	21 7	Oct., 1858	Oct., 1883	U. S. post hospital. Record broken. July, 1875; May, June, and July, 1878; Jan., 1863; Jan. to Aug., 1864, 1865, 1866, inclusive; Nov. and Dec., 1867; Feb., Apr., and May, 1868; Nov. and Dec., 1883.
481	Hermosa	La Plata	37 24	107 50	6,700	6 11	Apr., 1875	Aug., 1882	A. N. Fuller. Record broken. June, Oct., Dec., 1881; Jan., Feb., and Mar., 1882.
482	Durango	do	37 15	107 50	6,400	0 4	Sept., 1886	Jan., 1887	Colorado State Weather Service. Missing record. Dec., 1886.
483	Fort Lewis	do	37 14	106 59	8,500	7 2	Jan., 1880	Nov., 1887	U. S. post hospital. Record broken. Mar., May to Dec., 1880, inclusive.
		Archuleta.† Conejos.†							

† No data.

COLORADO—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
437, Fort Collins	1.20	2.80	1883	0.30	1873	2.11	7.42	1883	0.25	1883	0.92	1.45	1881	0.17	1882
438, Estes Park	0.16					4.39					4.52				
439, Fort Sedgwick	0.79	1.85	1868	0.14	1871	1.77	4.98	1868	0.06	1870	0.95	1.25	1869	0.68	1871
440, Fort Morgan	0.31					0.29					0.37				
441, Akron†															
442, Walden†															
443, Hot Sulphur Springs	2.26	3.57	1875	0.94	1876	1.32	1.86	1876	0.77	1875	2.68	3.98	1876	1.38	1875
444, Golden City	0.63	0.80	1874	0.30	1884	0.91	1.13	1874	0.51	1877	2.05	6.66	1876	0.41	1873
445, McGregor Ranch	0.16					0.33					4.52				
446, Denver	0.69	3.38	1875	0.10	1878	0.54	1.70	1876	0.11	1876	0.96	1.82	1878	0.22	1873
447, Mountain City						0.25					0.97				
448, Hutchinson	1.11					0.65					1.12				
449, Idaho Springs†															
450, Georgetown	1.23	1.39	1879	1.07	1887	0.70	1.29	1879	0.11	1887	0.40	0.60	1887	0.20	1879
451, Montgomery	4.55					1.00					3.70				
452, Alma	0.92					0.42					0.24				
453, Hugo†															
454, Ranch near Sanborn†															
455, Grand Junction†															
456, Whitewater						1.51					1.36				
457, T. S. Ranch†															
458, Gunnison											1.20				
459, Husted						0.13									
460, Templeton Gap						0.55					0.61				
461, Colorado Springs	0.25	0.78	1875	0.12	1876	0.24	1.56	1875	0.00	1883	0.53	1.12	1875	0.15	1883
462, Pike's Peak	1.65	4.26	1880	0.10	1884	1.38	3.91	1885	0.36	1882	2.14	4.72	1886	0.39	1884
463, Seven Lakes†															
464, Fountain	0.90					0.12	0.23	1875	0.04	1873	0.37	0.70	1872	0.04	1873
465, Salida						0.17					0.17				
466, Las Animas and Fort Lyon	0.14	0.68	1886	(T)	1869	0.23	0.86	1874	0.00	1878	0.45	1.87	1868	0.00	1870
466½, Kit Carson	2.25					0.89	2.02	1878	(T)	1880	4.75	9.50	1878	(T)	1880
467, Montrose	0.48	0.79	1886	0.16	1887	0.20	0.24	1887	0.13	1886	0.48	0.67	1885	0.28	1887
468, Carson City†															
469, South Pueblo	0.35	0.57	1884	0.03	1873	0.68	2.30	1875	0.04	1873	0.51	2.05	1875	0.05	1884
470, Fort Reynolds	0.70	1.12	1870	0.27	1869	0.89	1.27	1872	0.55	1871	0.72	2.32	1872	0.00	1870
471, Saguache	0.25					0.01					0.10				
472, Pandora†															
473, Ula†															
474, Westcliffe	0.77														

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
437, Fort Collins	1.59	3.94	1884	0.50	1882	2.86	4.84	1884	0.60	1880	1.90	3.18	1883	0.80	1884
438, Estes Park	0.45														
439, Fort Sedgwick	2.23	2.25	1870	2.20	1871	2.13					0.26				
440, Fort Morgan	0.06					2.55					0.73				
441, Akron†															
442, Walden†															
443, Hot Sulphur Springs	0.34					1.50					0.18	0.35	1875	0.01	1874
444, Golden City	2.64	5.29	1887	1.68	1876	2.98	5.40	1880	0.50	1887	2.07	3.70	1873	0.70	1871
445, McGregor Ranch	0.45														
446, Denver	2.08	2.80	1870	0.05	1878	2.63	8.57	1876	0.34	1870	1.37	2.78	1878	0.05	1871
447, Mountain City	0.60														
448, Hutchinson	1.60					1.31					0.31				
449, Idaho Springs						0.31					0.52				
450, Georgetown	1.48	2.11	1887	0.86	1879	0.68	1.17	1887	0.20	1879	0.35				
451, Montgomery	5.56					11.73									
452, Alma	0.43					0.57					0.73				
453, Hugo†															
454, Ranch near Sanborn						0.15									
455, Grand Junction	1.74														
456, Whitewater	1.51					0.85									
457, T. S. Ranch											0.31				
458, Gunnison†															
459, Husted						1.60					2.39				
460, Templeton Gap	0.90					1.80									
461, Colorado Springs	1.62	3.55	1874	0.20	1878	2.38	5.90	1874	0.12	1886	1.98	2.65	1873	0.20	1874
462, Pike's Peak	3.77	12.15	1879	0.43	1884	3.76	12.34	1882	0.40	1886	1.81	3.49	1878	0.58	1874
463, Seven Lakes†															
464, Fountain	2.21	3.00	1874	0.90	1873	1.22	1.60	1873	1.03	1874	1.06				
465, Salida	3.74					0.16					0.54				
466, Las Animas and Fort Lyon	1.23	2.64	1886	0.20	1885	2.11	5.42	1874	0.14	1868	1.58	2.79	1884	0.00	1879
466½, Kit Carson	0.06	0.12	1879	(T)	1880	2.79	6.05	1878	(T)	1880	2.39	4.66	1878	0.12	1879
467, Montrose	2.07	3.14	1886	1.21	1887	0.50	0.86	1885	0.07	1885	0.36	1.02	1885	0.01	1886
468, Carson City†															
469, South Pueblo	1.69	3.53	1884	0.00	1878	1.33	3.23	1887	0.26	1886	1.60	3.15	1878	0.20	1874
470, Fort Reynolds	1.09	1.17	1871	1.01	1870	1.69	3.53	1869	0.00	1870	0.80	1.30	1869	0.28	1871
471, Saguache	1.10														
472, Pandora											0.48				
473, Ula						10.43					0.05				
474, Westcliffe	8.00					0.92					1.91				

† No data. (T) Trace of rain-fall.

COLORADO—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
437, Fort Collins	2.55	3.07	1887	1.30	1883	1.05	2.12	1887	0.25	1884	1.40	2.51	1882	1.00	1883
438, Estes Park†															
439, Fort Sedgwick	1.21	2.06	1870	0.36	1870	2.00	3.12	1870	0.88	1869	3.00	3.00	1871		
440, Fort Morgan	0.52					0.60					0.00				
441, Akron						5.35									
442, Walden						0.32									
443, Hot Sulphur Springs	1.60	2.18	1874	1.03	1875	1.49	1.62	1874	1.36	1875	1.38	1.43	1875	1.34	1874
444, Golden City	1.54	3.94	1860	0.80	'71 '73	1.11	2.12	1887	0.40	1871	1.46	2.92	1873	0.12	1872
445, McGregor Ranch†															
446, Denver	1.59	4.32	1875	0.33	1877	1.45	2.25	1878	0.12	1870	1.05	2.89	1875	0.38	1877
447, Mountain City†															
448, Hutchinson	5.04					2.00					3.39				
449, Idaho Springs	4.26					2.84					0.23				
450, Georgetown	2.60					1.60	2.21	1887	1.20	1879	1.01				
451, Montgomery†															
452, Alma						4.97					0.32				
453, Hugo						2.60					0.55				
454, Ranch near Sanborn†															
455, Grand Junction	1.25					1.55					0.09				
456, Whitewater†															
457, T. S. Ranch						1.83									
458, Gunnison†															
459, Husted	2.69					3.52					0.16				
460, Templeton Gap	3.45					1.60									
461, Colorado Springs	3.72	6.07	1875	0.81	1874	2.74	4.42	1887	0.91	1874	1.49	3.37	1874	0.33	1886
462, Pike's Peak	4.45	8.13	1875	0.41	1884	3.99	11.29	1881	0.25	1884	1.77	3.87	1880	0.39	1882
463, Seven Lakes						3.19					0.89				
464, Fountain	2.29	5.65	1872	1.00	1874	0.60	1.23	1872	0.06	1873	0.61	1.20	1873	0.02	1872
465, Salida	1.61										0.90				
466, Las Animas and Fort Lyon	2.22	6.30	1872	0.14	1874	2.07	4.92	1880	0.23	1873	1.04	4.72	1870	0.20	1884
466½, Kit Carson	0.92	1.22	1878	0.62	1879	6.42	9.25	1877	0.57	1879	4.20	7.62	1877	0.79	1878
467, Montrose	0.92	1.34	1887	0.33	1886	1.91	2.23	1885	1.38	1886	1.05	1.56	1887	0.53	1885
468, Carson City†															
469, South Pueblo	2.14	4.50	1875	0.39	1886	1.88	4.62	1885	0.48	1873	1.38	3.30	1875	0.00	1874
470, Fort Reynolds	1.51	2.93	1870	0.61	1871	1.31	2.73	1869	0.30	1871	1.90	2.76	1874	1.44	1870
471, Saguache						1.76					0.45				
472, Pandora	3.18					3.60					1.23				
473, Ula†															
474, Westcliffe	6.63										0.12				

Name and number of station.	October.				November.				December.				Year.		
	Average.	Maximum.		Minimum.	Average.	Maximum.		Minimum.	Average.	Maximum.		Minimum.	Mean.	Maximum.	Minimum.
	Ins.	*Ins.*	*Yrs.*	*Ins.* *Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.* *Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.* *Yrs.*	*Ins.*	*Ins.* *Yrs.*	*Ins.* *Yrs.*
437, Fort Collins	1.03	2.07	1880	0.43 1883	0.28	1.18	1886	0.02 1882	0.37	1.33	1883	0.00 1884	17.26		
438, Estes Park†															
439, Fort Sedgwick	0.40	0.42	1869	0.38 1870	0.03	0.06	1867	0.00 1871	0.67	1.53	1887	0.05 1867	15.44		
440, Fort Morgan	0.19								0.44						
441, Akron†															
442, Walden†															
443, Hot Sulphur Sp's	1.08	1.81	1874	0.36 1875	1.91	2.57	1875	1.25 1874	0.88	1.09	1875	0.67 1874	16.62		
444, Golden City	1.28	2.12	1872	0.00 1874	1.06	2.82	1886	0.40 1874	0.70	1.00	1883	0.55 1873	18.43		
445, McGregor Ranch†															
446, Denver	0.71	2.15	1877	0.12 1876	0.70	1.50	1876	0.08 1874	0.69	1.70	1876	0.17 '71 '74	14.46	20.27 1875	11.14 1873
447, Mountain City	4.00				3.20										
448, Hutchinson	0.27				1.90				1.00				19.70		
449, Idaho Springs	0.64														
450, Georgetown	2.34	4.00	1878	0.68 1886	0.85				0.58	1.01	1886	0.15 1878	13.82		
451, Montgomery									2.10						
452, Alma	0.46				0.74				0.66						
453, Hugo	0.10														
454, Ranch near Sanborn†															
455, Grand Junction	0.20				5.50				6.60						
456, Whitewater†															
457, T. S. Ranch†															
458, Gunnison†															
459, Husted	0.33				0.25										
460, Templeton Gap†															
461, Colorado Springs	0.27	0.35	1887	0.13 1875	0.37	1.19	1875	0.19 1886	0.20	0.29	1875	0.08 1887	15.79	20.10 1872	14.55 1886
462, Pike's Peak†	1.41	4.64	1880	0.15 1883	1.74	7.81	1878	0.07 1883	1.46	4.55	1878	0.22 1874	29.33	45.57 1881	9.28 1884
463, Seven Lakes†															
464, Fountain	0.51	1.02	1874	0.50 1873	0.90	2.50	1873	0.19 1871	0.18	0.43	1874	0.03 1872	10.97		
465, Salida†															
466, Las Animas and Fort Lyon	0.61	3.75	1870	0.00 1876	0.25	0.70	1885	(T) 1882	0.33	1.68	1883	0.00 1868	12.26	16.97 1872	7.67 1871
466½, Kit Carson	3.29	6.55	1877	0.03 1878	0.29	0.50	1877	0.10 1879	3.49	10.25	1877	0.07 1879	31.74		
467, Montrose	0.90	1.19	1867	0.56 1885	0.71	1.08	1887	0.50 1885	0.52	0.71	1885	0.35 1887	10.10	10.24 1885	9.64 1887
468, Carson City									1.10						
469, South Pueblo	0.34	1.00	1874	(T) 1884	0.23	1.00	1875	0.00 (1)	0.54	0.86	1876	0.11 1878	12.67	15.81 1885	11.72 1878
470, Fort Reynolds	0.49	1.22	1870	0.00 1871	2.57	6.90	1871	0.06 1870	0.36	0.64	1870	0.07 1869	14.03	15.23 1871	11.12 1870
471, Saguache	0.50				0.45										
472, Pandora	2.56								0.36						
473, Ula†															
474, Westcliffe					1.22				1.05						

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

COLORADO—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
475, Fort Massachusetts	0.34	0.80	1857	0.00	1855	0.86	2.14	1856	0.20	1858	0.61	14.7	1855	0.08	1858
476, Silverton	1.39					1.02					1.72				
477, Monte Vista	0.15										0.44				
478, Summit	1.67	2.27	1879	0.70	1878	2.74	3.33	1877	1.94	1879	3.68	5.60	1878	1.06	1879
479, Trinidad	0.17	0.40	1879	0.01	1880	1.15	2.35	1878	0.14	1880	0.04	0.07	1879	0.03	1879, 1880
480, Fort Garland	0.54	1.50	1875	0.03	1861	0.80	1.30	1875	0.02	1862	0.73	2.50	1875	0.06	1863, 1876, 1877
481, Hermosa	1.10	1.99	1880	0.36	1877	1.44	2.50	1878	0.81	1881	0.68	1.60	1881	0.45	1878
482, Durango	0.46														
483, Fort Lewis	1.38	3.91	1886	(T)	1885	1.52	3.80	1880	0.44	1885	1.26	4.24	1884	0.40	1887

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
475, Fort Massachusetts	1.15	2.11	1858	0.39	1853	1.36	3.93	1854	0.00	1856	0.71	1.11	1853	0.24	1854
476, Silverton	0.40					0.47					0.36				
477, Monte Vista	1.00														
478, Summit	4.81	5.81	1877	3.50	1879	1.94	4.15	1877	0.38	1879	1.19	2.98	1878	0.00	1879
479, Trinidad	1.03	2.93	1879	0.04	1880	2.43	2.54	1879	2.32	1878	5.40	12.83	1878	0.44	1880
480, Fort Garland	1.09	1.48	1879	0.00	1878	1.03	2.23	1875	0.00	1860	1.28	2.42	1877	0.01	1867
481, Hermosa	0.58	1.56	1877	0.13	1876	0.56	1.90	1877	0.00	1879	0.58	1.34	1877	0.06	1879
482, Durango†															
483, Fort Lewis	1.28	2.74	1883	0.10	1880	0.80	1.97	1883	0.20	1881	0.90	2.00	1882	0.00	1881

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
475, Fort Massachusetts	2.01	3.04	1853	0.72	1857	2.84	3.98	1857	1.48	1853	1.80	3.33	1885	1.25	1853
476, Silverton	1.34														
477, Monte Vista	2.06					1.41					0.94				
478, Summit	3.11	3.60	1877	2.70	1879	2.87	5.10	1878	1.64	1880	2.17	3.70	1877	0.76	1879
479, Trinidad	3.24	4.40	1880	2.61	1879	3.26	5.48	1878	2.40	1877	1.27	2.26	1880	0.01	1879
480, Fort Garland	2.48	2.61	1860	0.07	1863	1.95	3.40	1883	0.00	1877	1.10	2.50	1875	0.03	1863
481, Hermosa	1.79	3.53	1880	0.30	1882	2.32	5.57	1881	1.12	1875	1.35	2.70	1876	0.03	1879
482, Durango†											4.20				
483, Fort Lewis	2.17	7.54	1887	(T)	1886	2.83	3.99	1886	0.91	1883	1.32	2.62	1887	0.65	1883

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
475, Fort Massachusetts	0.87	1.84	1852	0.00	1855	2.61	6.34	1852	0.79	1856	1.07	2.30	1854	0.38	1855	17.23	18.81	1885	13.87	1856
476, Silverton	0.60					1.86					1.26									
477, Monte Vista	0.72					0.28														
478, Summit	2.85	4.40	1877	0.33	1878	1.82	2.30	1878	0.90	1877	1.82	2.58	1878	1.00	1877	30.67				
479, Trinidad	1.41	3.20	1877	0.36	1878	1.65	3.89	1878	0.14	1877	0.68	1.83	1878	0.03	1879	21.73	33.84	1878	15.78	1879
480, Fort Garland	0.51	1.16	1881	0.00	1875	0.62	1.02	1878	0.06	1861	0.72	4.01	1868	0.10	1881	12.85	42.34	1872	5.44	1861
481, Hermosa	1.23	2.10	1880	0.02	1875	1.34	3.14	1881	0.14	1876	1.69	4.28	1879	0.03	1876	14.66	15.84	1880	13.28	1877
482, Durango	2.29					1.44														
483, Fort Lewis	1.37	2.40	1883	0.20	1882	1.35	3.00	1880	(T)	1884	1.63	4.30	1884	0.26	1886	17.80	22.44	1884	13.00	1882

† No data. (T) Trace of rain-fall.

NEW MEXICO TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
484	Fort Lowell	Taos	36 32	106 56	.....	4 6	Oct., 1868	June, 1874	U. S. post hospital. Record broken. Jan. to Sept., 1868, inclusive; Jan. and May to Dec., 1869, inclusive; July to Dec., 1874, inclusive.
485	Camp Burgwin	....do	36 30	105 40	7,900	5 9	Sept., 1854	May, 1860	U. S. post hospital. Record broken. Jan. to Aug., 1854, inclusive; June to Dec., 1860.
		Colfax.†							
486	Fort Union	Rio Arriba.† Mora	35 54	104 57	6,750	29 1	Sept, 1851	Oct., 1887	U. S. post hospital. Record much broken. Jan. to Aug., 1851, inclusive; Oct. and Nov., 1861; Apr. to Dec., 1863, inclusive; Jan., Feb., Aug. to Dec., 1867, inclusive; Jan. to May, inclusive, Nov. and Dec., 1868; Jan. to Apr., inclusive, June, Aug., and Dec., 1869; Mar., 1871; Sept., 1872; Jan. and May, 1873; Oct., Nov., and Dec., 1876; Oct., 1877; Feb., Apr., and July, 1878; Apr., 1879; Jan. and Feb., 1880; Feb., Mar., and Nov., 1882; Feb. and Mar., 1883; Oct. and Dec., 1884; Feb. and Mar., Nov. and Dec., 1887; years 1864, 1865, and 1866.
487	Las Vegas	San Miguel	35 35	105 13	6,418	1 10	Apr., 1850	Jan., 1876	Abner Woodworth and U. S. post hospital. Record much broken. Jan., Feb., Mar., May to Aug., 1850, inclusive; Jan., Aug. to Dec., 1851, inclusive, Jan. and Feb., 1875; Feb. to Dec., 1876, inclusive.
488	Fort Bascom	....do	35 23	103 27	4,000	2 3	Dec., 1864	Oct., 1870	U. S. post hospital. Record much broken. Jan. to Nov., 1864, inclusive; Jan., Feb., Apr., May, June, Oct., and Dec., 1865; Apr. to Dec., 1866, inclusive; years 1867 and 1868; Jan., Feb., and Oct., 1869; Mar., Nov., and Dec., 1870.
489	Gallinas Springs	....do	35 14	104 48	.....	1 10	Mar., 1885	Dec., 1886	James E. Whitmore. Jan. and Feb., 1885.
490	Puerto de Luna	....do	34 45	104 42	.....	2 6	Mar., 1884	Sept., 1886	F. Meredith Jones. Record broken. Jan. and Feb., 1884; July and Oct. to Dec., 1886, inclusive.
491	Fort Sumner	....do	34 19	104 09	.....	4 8	May, 1864	July, 1869	U. S. post hospital. Record much broken. Jan. to Apr., 1864, inclusive; May to Aug., 1866, inclusive; Jan., Mar., and Dec., 1867; Aug. to Dec., 1869, inclusive.
492	Cebolleta	Bernalillo	35 20	107 20	6,200	2 1	Dec., 1849	Dec., 1851	U. S. post hospital. Jan. to Nov., 1849, inclusive.
493	Albuquerque	....do	35 06	106 40	5,032	12 10	Feb., 1850	Aug., 1879	Signal Service and U. S. post hospital. Record much broken. Jan., 1850; Aug. to Dec., 1851, inclusive; Jan., Feb., and Mar., 1852; June to Oct., inclusive, and Dec., 1855; Feb., Mar., and Apr., 1864; May, 1865; Mar. to Aug., inclusive, and Dec., 1866; Mar., May, June, Aug. to Dec., 1867, inclusive; Jan. to Sept., 1878, inclusive; June to Dec., 1879, inclusive; years 1861, 1862, 1863, 1868 to 1878, inclusive.
494	Santa Fé	Santa Fé	35 41	105 56	7,026	30 10	Feb., 1850	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Jan., May, June, Aug. to Dec., 1850, inclusive; all months, 1851; Jan. to Aug., 1852, inclusive; Apr. and May, 1861; all months, 1862; Feb., Apr., Aug., 1864; Jan. and Mar. to Dec., 1866, inclusive; Jan. to Aug., inclusive, Oct. to Dec., 1867, inclusive; Oct., Dec., 1871; Dec., 1881; June to Dec., 1883, inclusive; Jan. to Nov., 1884, inclusive.
495	Fort Wingate	Valencia	35 28	108 32	6,822	21 6	Dec., 1864	Oct., 1887	U. S. post hospital. Record much broken. Jan. to Nov., 1864, inclusive; June, 1865; Mar., May, June, July, Aug., Nov., 1866; Jan. to Apr., inclusive, and Aug., 1868; Jan. and Apr., 1884; Feb., Mar., Apr., 1885.

† No data.

NEW MEXICO TERRITORY—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	Record. From—	Record. To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
496	Los Pinos	Valencia	34 50	106 40	5,000	0 11	Jan., 1865	May, 1866	U. S. post hospital. Record broken. Feb., July, Aug., Oct., 1865; Mar., Apr., June to Dec., 1866, inclusive.
497	Socorro	Socorro	34 08	106 55	4,560	2 10	Nov., 1849	May, 1881	Signal Service and U. S. post hospital. Record broken. Jan. to Oct., 1849, inclusive; Jan., 1852, to Dec., 1879; Mar. and Sept. to Dec., 1851, inclusive; June to Sept., 1880, inclusive; June to Dec., 1881, inclusive.
498	Fort Tularosa	....do	33 57	108 15	.....	1 5	May, 1873	Oct., 1874	U. S. post hospital. Record broken. Jan. to Apr., 1873, inclusive; May, Nov., Dec., 1874.
499	Fort Conrad	....do	33 47	106 48	4,576	3 9	Oct., 1851	June, 1855	U. S. post hospital. Record broken. Jan. to Sept., 1851, inclusive; July to Dec., 1855, inclusive.
500	Fort Craig	....do	33 38	107 01	4,576	21 3	Jan., 1855	Dec., 1884	Signal Service and U. S. post hospital. June and July, 1860; July, Aug., Dec., 1862 (all months, 1863 and 1864); Jan., Mar., June, Oct., 1865; June, July, Aug., Dec., 1866; May to Aug., 1867, inclusive; Feb. to July, 1871, inclusive; Jan., July, Aug., Sept., 1872; July to Dec., 1879, inclusive (years 1880, 1881, 1882, 1883).
501	Lava	....do	33 31	106 09	.....	3 0	Jan., 1885	Dec., 1887	Signal Service.
502	Fort McRae	....do	33 02	107 05	4,500	5 9	Apr., 1864	Jan., 1876	U. S. post hospital. Record much broken. Jan., Feb., Mar., July to Dec., 1864, inclusive; Jan., Feb., Mar., June, July, Aug., 1868; Feb., Mar., May to Dec., 1865, inclusive; Feb., Mar., May, 1870; Jan., Apr. to Nov., 1871, inclusive; Jan., Feb., Mar., June to Nov., 1872, inclusive; Jan. and May, 1873; June to Sept., 1875, inclusive Feb. to Dec., 1876, inclusive.
503	Fort Stanton	Lincoln	33 29	105 31	6,150	12 8	Jan., 1856	Dec., 1887	Signal Service and U. S. post hospital. Jan. to Aug., inclusive; Oct., Nov., Dec., 1866; Jan. to Aug., inclusive, Oct., 1868; Jan., Sept., 1869; Feb., Oct., Nov., 1871; Nov., Dec., 1872; May, 1886.
504	Fort Thorn	Sierra.† Dona Ana	32 46	107 10	4,500	4 11	Jan., 1854	Dec., 1858	U. S. post hospital. Mar., 1857.
505	Fort Selden	....do	32 27	106 55	4,250	12 3	Nov., 1865	Oct., 1887	U. S. post hospital. Record broken. Jan. to Oct., inclusive, Dec., 1865; Feb., Mar. to July, inclusive, Oct., 1866; years 1878 to 1885, inclusive; June, 1867; Mar. to Dec., 1877, inclusive; Apr., July, 1886; Nov., Dec., 1887.
506	La Mesilla	....do	32 17	106 48	.....	5 0	Aug., 1877	July, 1882	Signal Service. Record broken. Jan. to July, 1877, inclusive; Aug. to Dec., 1882.
507	Fort Fillmore	....do	32 13	106 42	3,937	8 3	Sept., 1851	Dec., 1859	U. S. post hospital. Record broken. Jan. to Aug., 1851, inclusive; Jan., 1852.
508	Fort Webster	Grant	32 48	108 04	6,350	1 11	Feb., 1852	Dec., 1853	U. S. post hospital. Jan., 1852.
509	Fort Bayard	....do	32 47	108 09	6,022	12 5	Mar., 1867	Oct., 1887	Signal Service and U. S. post hospital. Jan., Feb., May, 1867; Mar., 1868; Dec., 1870; Mar., 1871; Jan., Mar. to Dec., 1878, inclusive; years 1879, 1880, 1881; Jan. to May, 1882, inclusive; years 1883, 1884, 1885; Apr., 1886; Nov., Dec., 1887.
510	Silver City	....do	32 44	108 18	.....	4 11	May, 1878	Mar., 1883	Signal Service. Record broken. Jan. to Apr., 1878, inclusive; Apr. to Dec., 1883, inclusive.
511	Fort Cummings	....do	32 27	107 40	.....	4 4	Mar., 1869	July, 1873	U. S. post hospital. Record broken. Jan., Feb., 1869; Feb., 1870; Aug. to Dec., 1873, inclusive.
512	Lordsburg	....do	32 20	108 40	.....	5 2	July, 1882	Nov., 1887	Central Pacific R. R. Record broken. Jan. to June, 1882, inclusive; June, Oct., Nov., 1883; June, 1885; Jan., Dec., 1887.
513	Deming	.... do	32 18	107 48	.....	4 4	Dec., 1882	Nov., 1887	Central Pacific R. R. Record broken. Jan. to Nov., 1882, inclusive; Feb., Mar., Oct., Dec., 1883; Nov., 1884; Feb., 1885; Mar., 1886; Feb., Dec., 1887.

† No data.

NEW MEXICO TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
484, Fort Lowell	0.71	1.76	1874	0.00	1873	0.96	1.70	1869	0.12	1872	0.76	1.55	1869	0.10	1872
485, Camp Burgwin	0.72	1.50	1857	0.08	1856	0.47	1.35	1759	0.05	1855	0.51	1.43	1860	0.12	1857
486, Fort Union	0.48	1.29	1881	0.00	1855	0.45	2.70	1877	0.00	(1)	0.46	2.52	1875	0.00	(1)
487, Las Vegas	0.40					4.23					0.98	1.95	1875	0.01	1851
488, Fort Bascom	0.13	0.25	1870	0.00	1866	0.00					0.09	0.25	1869	0.00	1866
489, Gallinas Springs	1.05					1.50					1.00	1.00	'85 '86		
490, Puerto de Luna	0.98	1.04	1886	0.92	1885	1.94	3.18	1885	0.71	1886	0.53	0.81	1886	0.05	1884
491, Fort Sumner	0.23	0.52	1869	0.00	1868	0.35	1.32	1855	0.00	'67 '68	0.97	2.20	1868	0.45	1865
492, Cebolleta	0.30	0.45	1850	0.15	1851	1.61	2.11	1851	1.10	1850	0.36	0.63	1850	0.10	1851
493, Albuquerque	0.32	1.45	1857	0.00	(1)	0.22	0.56	1851	0.00	(1)	0.26	1.02	1855	0.00	'57 '60
494, Santa Fé	0.52	1.49	1871	0.00	'53 '58	0.89	5.20	1865	0.06	1882	0.66	2.59	1856	0.00	1863
495, Fort Wingate	1.12	3.30	'69 '72	0.10	1870	1.59	11.25	1873	0.00	1866	0.94	4.95	1881	0.00	1873
496, Los Pinos	0.08					0.00					0.00				
497, Socorro	0.20	0.55	1881	0.02	1851	0.25	0.52	1850	0.01	1881	0.34	0.60	1850	0.07	1881
498, Fort Tulerosa	2.24					4.94					1.38				
499, Fort Conrad	0.06	0.23	1853	0.00	'54 '55	0.11	0.39	1853	0.00	1854	0.14	0.38	1853	0.00	1852
500, Fort Craig	0.34	1.35	1861	0.00	(1)	0.40	2.43	1877	0.00	(1)	0.32	1.50	1858	0.00	(1)
501, Lava	0.14	0.28	1885	(T)	1887	0.34	0.46	1887	0.17	1885	0.36	1.02	1885	(T)	1887
502, Fort McRae	0.16	0.40	1869	0.00	'65 '70	0.18	0.67	1869	0.00	1871	0.36	0.70	1869	0.00	1871
503, Fort Stanton	0.58	1.68	1871	0.00	1870	0.77	3.35	1860	0.00	1870	1.11	4.28	1871	0.08	1860
504, Fort Thorn	0.48	1.30	1858	0.00	'54 '57	0.86	2.51	1857	0.00	'54 '58	0.58	1.03	1856	0.04	1858
505, Fort Selden	0.24	0.97	1876	0.00	(1)	0.57	4.46	1877	0.00	(1)	0.15	0.81	1866	0.00	(2)
506, La Mesilla	0.42	1.20	1879	0.04	1881	0.57	1.36	1882	(T)	1881	0.41	0.69	1878	0.14	1881
507, Fort Fillmore	0.05	0.30	1857	0.00	(2)	0.42	1.85	1856	0.00	(1)	0.17	0.65	1854	0.00	'57 '59
508, Fort Webster	0.40					1.00	1.51	1852	0.50	1853	0.07	0.13	1852	0.00	1853
509, Fort Bayard	0.78	1.79	1874	0.03	1878	1.39	5.68	1874	0.05	1871	0.57	1.72	1874	0.00	1887
510, Silver City	1.42	2.78	1879	0.02	1881	1.08	2.06	1882	0.63	1883	0.90	1.57	1883	0.32	1879
511, Fort Cummings	0.72	2.00	1873	0.00	1870	0.26	0.62	1873	0.00	1872	0.40	1.38	1869	0.00	1872
512, Lordsburg	0.38	0.80	1884	0.00	1885	0.23	0.37	1883	0.12	1887	1.22	4.00	1885	0.00	(1)
513, Deming	0.32	0.81	1884	0.00	1887	0.60	0.70	1884	0.50	1886	0.25	0.54	1885	0.00	1887

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
484, Fort Lowell	0.50	2.00	1869	0.00	1873	0.02	0.07	1874	0.00	'71 '73	0.17	0.40	1871	0.00	'73 '74
485, Camp Burgwin	0.81	2.24	1858	0.05	1855	0.25	0.74	1858	0.00	1860	0.36	0.89	1858	0.02	1857
486, Fort Union	0.70	3.22	1886	0.00	1855	1.12	5.96	1875	0.00	(1)	2.11	7.05	1852	0.11	1853
487, Las Vegas	0.66	2.11	1851	0.02	1850	2.06	2.82	1851	1.30	1875	0.42	0.85	1875	0.00	1851
488, Fort Bascom	1.55	1.70	1869	1.40	1870	1.46	1.72	1869	1.20	1870	2.24	2.59	1869	1.90	1870
489, Gallinas Springs	1.35	1.75	1886	0.95	1885	1.54	1.77	1885	1.31	1886	3.36	5.04	1886	1.68	1885
490, Puerto de Luna	0.22	0.39	1886	(T)	1884	1.20	2.40	1885	0.00	1886	1.78	3.18	1885	1.07	1884
491, Fort Sumner	0.36	0.99	1869	0.07	1865	1.05	2.51	1869	0.38	1865	1.95	3.98	1864	0.70	1867
492, Cebolleta	0.75	0.94	1851	0.55	1850	0.12	0.23	1850	0.01	1851	0.14	0.28	1850	0.00	1851
493, Albuquerque	0.30	1.60	1858	0.00	'53 '60	0.21	1.19	1854	0.00	(1)	1.26	8.15	1852	0.00	(1)
494, Santa Fé	0.72	1.83	1877	0.00	1853	0.81	2.31	1881	0.00	'59 '60	1.22	3.50	1861	0.06	1868
495, Fort Wingate	0.86	2.70	1877	0.07	1874	0.52	3.00	1872	0.00	(1)	0.75	3.15	1873	0.00	(2)
496, Los Pinos	0.00					0.53					0 00				
497, Socorro	0.28	0.45	1851	0.05	1880	0.20	0.50	1881	0.01	1851	0.09	0.17	1850	0.00	1851
498, Fort Tulerosa	0.34					0.55					0.63	0.96	1873	0.30	1874
499, Fort Conrad	0.04	0.08	1855	0.00	1853	0.33	0.62	1854	0.10	1855	0.78	2.15	1852	0.01	1854
500, Fort Craig	0.20	1.08	1868	0.00	(1)	0.24	2.03	1875	0.00	(1)	0.75	1.74	1869	0.00	1877
501, Lava	0.17	0.44	1885	(T)	1886	0.41	0.82	1885	0.00	1886	0.63	0.97	1885	0.29	1886
502, Fort McRae	0.59	2.20	1874	0.00	1872	1.08	5.00	1864	0.09	1869	1.34	3.40	1864	0.10	1874
503, Fort Stanton	0.68	2.75	1869	0.00	1871	0.75	4.17	1869	0.00	'60 '72	1.84	3.70	1869	0 14	1871
504, Fort Thorn	0.10	0.20	'54 '55	0.00	1850	0.24	1.10	1854	0.00	(1)	0.21	0.74	1856	0.00	'55 '57
505, Fort Selden	0.12	0.62	1874	0 00	(2)	0.20	1.13	1868	0.00	(1)	0.47	2.15	1869	0.01	1868
506, La Mesilla	0.15	0.45	1880	0.01	1882	0.65	1.75	1881	0.00	'79 '80	0.44	1.02	1878	(T)	1880
507, Fort Fillmore	0.13	0.45	1855	0.00	(1)	0.18	0.86	1854	0.00	(1)	0.47	1.74	1852	0.00	1859
508, Fort Webster	2.23	4.45	1852	0.00	1853	1.14	1.23	1852	1.05	1853	2.98	4.89	1852	1.08	1853
509, Fort Bayard	0.39	2.32	1879	0.00	1876	0.26	0.90	'68 '74	0.00	(1)	0.85	3.74	1869	0.00	(1)
510, Silver City	0.22	0.48	1881	0.01	1879	0.48	1.37	1882	0.00	(1)	0.69	1.92	1882	0.08	1879
511, Fort Cummings	0.25	0.90	1869	0.00	'70 '71	0.25	1.10	1869	0.00	'70 '71	1.72	3.52	1869	0.44	1872
512, Lordsburg	0.04	0.20	1884	0.00	(1)	0.10	0.40	1885	0.00	'83 '86	0.10	0.30	1887	0.00	'84 '86
513, Deming	0.04	0.20	1884	0.00	(2)	0.15	0.77	1885	0.00	(2)	0.29	1.33	1885	0.00	(1)

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

NEW MEXICO TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
484, Fort Lowell	1.96	3.94	1872	0.08	1873	3.07	3.81	1872	2.04	1870	1.42	3.06	1872	0.00	1870
485, Camp Burgwin	0.85	1.85	1859	0.13	1857	1.71	2.87	1859	0.21	1857	1.01	1.93	1859	0.40	1856
486, Fort Union	4.21	17.30	1861	0.30	1869	4.78	14.80	1861	0.48	1879	2.12	5.63	1851	0.00	'62 '69
487, Las Vegas	6.00	6.90	1875	5.10	1851	2.65	.....	.....	.....	.....	4.02	8.05	1875	0.00	1850
488, Fort Bascom	2.99	4.41	1865	2.20	1869	1.86	2.93	1870	1.10	1865	0.27	0.79	1870	0.00	1869
489, Gallinas Springs	2.11	2.57	1886	1.65	1885	3.82	5.12	1886	2.51	1885	3.89	7.78	1886	(T)	1885
490, Puerto de Luna	1.38	2.10	1884	0.65	1885	4.67	5.63	1884	2.81	1885	2.19	3.85	1886	1.29	1884
491, Fort Sumner	3.18	10.63	1865	0.80	1867	2.37	4.37	1865	0 50	1867	1.47	3.15	1867	0.35	1856
492, Ceboletta	0.55	0.85	1850	0.25	1851	1.22	2.18	1851	0.26	1850	3.60	5.82	1851	1.37	1850
493, Albuquerque	0.99	3.60	1858	0.07	1852	1.80	4.90	1858	0.21	1879	0.83	3.10	1859	0.00	'58 '65
494, Santa Fé	2.72	7.45	1853	0.44	1857	2.88	7.89	1855	0.49	1860	1.67	5.38	1855	0.00	1861
495, Fort Wingate	2.46	7.60	1867	0.26	1873	2.51	5.90	1878	0.29	1879	1.28	3.60	1873	0.00	1867
496, Los Pinos	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.00	.....	.....	.....	.....
497, Socorro	0.84	1.29	1850	0.40	1851	1.30	2.07	1851	0.54	1850	0.24	.....	.....	.....	.....
498, Fort Tulerosa	3.65	6.00	1874	1.30	1873	8.45	10.48	1873	6.42	1874	1.20	1.76	1873	0.64	1874
499, Fort Conrad	1.28	2.78	1853	0.41	1854	1.18	1.32	1852	1.02	1854	1.25	2.13	1854	0.53	1853
500, Fort Craig	2.69	7.43	1859	0.10	1873	3.03	11.87	1859	0.57	1855	1.91	6.32	1856	0.00	1869
501, Lava	1.86	2.27	1885	1.27	1887	2.35	3.32	1886	1.78	1885	2.62	5.67	1886	0.06	1885
502, Fort McRae	1.36	4.11	1870	0.05	1873	3.45	3.98	1869	2.50	1873	1.59	3.90	1874	0.00	1869
503, Fort Stanton	3.43	5.80	1871	1.35	1885	4.67	9.24	1857	1.13	1871	2.58	6.14	1857	0.74	1858
504, Fort Thorn	2.65	4.70	1857	0.17	1856	3.79	6.61	1854	1.21	1855	4.23	6.35	1856	0.20	1858
505, Fort Selden	1.86	5.20	1870	0.20	1873	1.85	5.09	1869	0.50	1875	1.54	3.25	1886	0.14	1869
506, La Mesilla	2.21	3.90	1881	1.32	1882	1.16	3.13	1881	0.01	1877	0.86	1.96	1881	0.18	1879
507, Fort Fillmore	1.89	3.84	1852	0.43	1857	1.80	3.68	1857	0.57	1855	1.53	2.61	1856	0.00	1858
508, Fort Webster	3.67	4.79	1852	2.55	1853	2.75	4.29	1852	1.21	1853	2.36	3.47	1852	1.26	1853
509, Fort Bayard	2.83	7.22	1875	0.09	1871	3.27	11.73	1873	0.19	1871	2.15	5.90	1875	0.03	1869
510, Silver City	3.96	9.62	1881	1.37	1879	5.95	8.69	1881	3.51	1880	2.24	3.89	1881	0.27	1878
511, Fort Cummings	3.05	6.50	1870	1.07	1869	4.83	8.99	1870	1.83	1871	1.11	2.88	1871	0.31	1872
512, Lordsburg	1.66	3.17	1887	0.75	1885	2.09	3.45	1883	0.35	1885	0.83	2.35	1884	0.00	1882
513, Deming	1.60	2.95	1883	0.52	1884	2.18	4.19	1886	0.81	1885	1.83	4.36	1886	0.09	1885

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
484, Fort Lowell	0.08	0.40	1872	0.00	(2)	0.67	1.82	1868	0.00	'70 '72	1.17	2.20	1868	0.35	1871	11.49	13.58	1872	7.42	1873
485, Camp Burgwin	0.44	1.25	1857	0.00	1855	0.97	1.97	1857	0.58	1858	0.55	0.86	1857	0.06	1854	8.65	12.70	1859	3.86	1856
486, Fort Union	0.89	5.40	1865	0.00	(1)	0.77	3.90	1878	0.00	(1)	0.42	1.42	'58 '85	0.00	(1)	18.51	39.47	1861	10.38	1870
487, Las Vegas	0.00	0.00	.....	0.00	.....	0.38	0.65	1875	0.12	1850	1.66	3.12	1850	0.20	1875	23.46	.....	.....	.....	.....
488, Fort Bascom	1.89	.....	.....	.....	.....	0.75	1.50	1869	0.00	1865	0.50	1.00	1869	0.00	1864	13.73	.....	.....	.....	.....
489, Gallinas Springs	0.80	1.26	1886	0.35	1885	0.18	0.25	1885	0.10	1886	0.62	1.00	1885	0.25	1886	21.22	.....	.....	.....	.....
490, Puerto de Luna	0.68	1.04	1884	0.33	1885	0.07	0.14	1885	0 00	1884	0.46	0.66	1885	0.26	1884	16.10	.....	.....	.....	.....
491, Fort Sumner	1.21	3.65	1865	0.52	'66 '68	0.64	1.48	1864	0.00	1867	1.24	3.57	1855	0.10	1856	15.02	27.23	1865	12.37	1868
492, Ceboletta	1.59	1.60	1851	1.58	1850	0.68	0.81	1851	0.55	1850	1.13	1.84	1850	0.40	1849	12.05	15.12	1851	9.69	1850
493, Albuquerque	0.81	5.40	1865	0.00	(1)	0.40	1.83	1878	0.00	(1)	0.36	1.40	1858	0.00	'57 '59	7.76	16.30	1858	3.78	1860
494, Santa Fé	1.03	4.19	1881	0.00	(1)	0.89	3.54	1854	0.00	(1)	0.80	2.26	1874	0.00	1871	14.81	24.80	1854	7.75	1863
495, Fort Wingate	1.08	4.60	1867	0.00	'78 '82	0.77	4.10	1868	0.00	(1)	0.89	2.75	1867	0.00	1866	14.77	25.06	1873	5.69	1879
496, Los Pinos	.....	.....	.....	.....	.....	0.00	.....	.....	.....	.....	0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....
497, Socorro	1.52	1.81	1850	0.95	1880	1.16	1.76	1849	0.81	1880	1.59	0.81	1880	0.44	1850	8.01	.....	.....	.....	.....
498, Fort Tuleroso	1.29	2.58	1874	0.00	1873	0.38	.....	.....	.....	.....	7.08	.....	.....	.....	.....	33.13	.....	.....	.....	.....
499, Fort Conrad	0.50	1.63	1852	0.00	1853	0.78	1.34	1852	0.09	1851	0.31	0.67	1853	0.08	'52 '54	6.76	8.63	1852	5.76	1854
500, Fort Craig	0.84	8.06	1862	0.00	(1)	0.47	2.38	1862	0.00	(2)	0.40	1.01	1874	0.00	(1)	11.59	24.58	1859	4.63	1858
501, Lava	0.70	1.15	1886	0.09	1885	0.08	0.20	1885	(T)	1886	0.42	1.15	1885	(T)	1886	12.63	15 53	1887	9.25	1885
502, Fort McRae	0.28	0.95	1870	0.00	1874	0.33	0.94	1869	0 00	'70 '74	0.38	1.10	1872	0.00	'73 '74	11.10	13.45	1869	5.97	1873
503, Fort Stanton	1.55	3.02	1872	0.08	1860	0.52	2.14	1856	0.00	1870	4.07	3.92	1869	0 00	1871	19.55	28.70	1857	13.65	1860
504, Fort Thorn	0.33	1.00	1857	0.00	'54 '58	0.71	1.94	1855	0.00	1857	0.53	1.10	1857	0.00	1855	14.71	20.55	1857	10.58	1858
505, Fort Selden	0.74	2.65	1876	0.00	'71 '75	0.27	0.71	1874	0.00	(2)	0.48	2.70	1872	0.00	'71 '76	8.49	12.60	1869	3.49	1873
506, La Mesilla	0 87	2.14	1881	0.09	1878	0.41	1.29	1878	0.00	1879	0.75	1.26	1879	0.07	187-	8.90	15.05	1881	7.10	1880
507, Fort Fillmore	0.55	2.41	1857	0.00	'56 '58	0.94	2.66	1852	0.00	'57 '58	0.29	1.74	1851	0.00	(2)	8.42	12.41	1852	5.11	1858
508, Fort Webster	0.80	1.19	1852	0.40	1853	1.87	3.48	1852	0 26	1853	0.19	0.30	1852	0.08	1853	19.46	29.73	1852	8.79	1853
509, Fort Bayard	0.82	4.17	1876	0.00	'73 '75	0.46	1.30	1871	0.00	(1)	0.95	2.08	1872	0.00	1886	14.72	22.18	1873	6.44	1871
510, Silver City	1.19	3.21	1881	0.00	1882	1.40	3.81	1878	0.00	1880	0.75	1.65	1880	0.28	1881	20.28	30.82	1881	13.77	1879
511, Fort Cummings	0.35	0.72	1871	0.12	1870	0.17	0.52	1869	0.00	'70 '72	1.92	4.95	1872	0.10	1871	15.03	20.55	1870	10.79	1871
512, Lordsburg	0.58	2.55	1884	0.00	'82 '87	0.45	1.20	1882	0.00	1884	0.51	1.46	1884	0.00	1886	8.19	13.09	1884	5.50	1886
513, Deming	1.11	2.13	1887	0.28	1885	0.28	0.50	1885	0.00	1886	0.62	1.35	1884	0.00	1886	9.27	.....	.....	.....	.....

(1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
514	Fort Elliott	Wheeler	35 30	100 21	.....	8 0	Dec., 1879	Dec., 1887	Signal Service. Sept., 1886.
		Dallam.†							
		Sherman.†							
		Hansford.†							
		Ochiltree.†							
		Lipscomb.†							
		Hartley.†							
		Moore.†							
		Hutchinson.†							
		Roberts.†							
		Hemphill.†							
		Oldham.†							
		Potter.†							
		Carson.†							
		Gray.†							
		Greer.†							
		Deaf Smith.†							
		Randall.†							
		Armstrong.†							
		Donley.†							
		Collingsworth.†							
		Parmer.†							
		Castro.†							
		Swisher.†							
		Briscoe.†							
		Hall.†							
		Childress.†							
		Hardeman.†							
		Wilbarger.†							
		Bailey.†							
		Lamb.†							
		Hale.†							
		Floyd.†							
		Motley.†							
		Cottle.†							
		Wichita.†							
515	Henrietta	Clay	33 45	98 09	.....	3 8	Apr., 1879	Mar., 1883	Signal Service. July to Oct., 1880, inclusive.
516	Buffalo Springs	....do	33 30	98 14	1,800	0 3	Nov., 1867	Feb., 1868	U. S. post hospital. Jan., 1868.
		Montague.†							
		Cook.†							
517	Denison	Grayson	33 45	105 31	.....	7 9	July, 1875	Mar., 1883	Signal Service.
518	Paris	Lamar	33 40	95 22	.....	2 7	July, 1882	Sept., 1887	Signal Service. Record much broken. Nov., Dec., 1882; Jan. to Mar., and Oct. to Dec., 1883, inclusive; Jan. to Mar., and Oct. to Dec., 1884, inclusive; Jan. to Apr., inclusive, and Nov., Dec., 1885; Jan. to May, inclusive, and Nov., Dec., 1886; Jan. to Apr., inclusive, and Aug., 1887.
519	Clarksville	Red River	33 35	95 02	600	12 5	Sept., 1871	Aug., 1885	Allen Martin, J. Anderson. Record broken. Aug., 1874; Aug., 1882, to Sept., 1883, inclusive; Feb., Apr., May, June, 1885.
520	Bonham	Fannin	33 40	96 13	435	0 3	Oct., 1859	Dec., 1859	Prof. S. Sias.
521	Honey Grove	....do	33 35	95 46	.....	0 11	Nov., 1883	July, 1885	J. S. Kendall. June, 1884, to Mar., 1885, inclusive.
		Cochran.†							
		Hockley.†							
		Lubbock.†							
	Silver Falls	Crosby	33 48	101 08	.....	1 10	Jan., 1886	Nov., 1887	C. M. Tilford. Mar., 1886.
		Dickens.†							
		King.†							
		Knox.†							
		Baylor.†							
		Archer.†							
		Bowie.†							
		Delta.†							
523	Fort Richardson	Jack	33 15	98 10	.....	7 10	Apr., 1868	Apr., 1878	U. S. post hospital. Record broken. Apr., 1869; July, 1870, to June, 1872, inclusive; May, 1875; Feb., 1876.
524	Jacksborough	....do	33 15	98 08	.....	5 6	July, 1877	May, 1883	Signal Service. Sept. to Nov., 1877. inclusive; July, 1880, and Apr., 1882.
525	Decatur	Wise	33 20	97 35	.....	5 5	Mar., 1877	Aug., 1882	Signal Service. Oct., 1877.
526	Pilot Point	Denton	33 20	96 50	800	3 9	July, 1877	Mar., 1881	Signal Service.
527	Belmont Farm	Collin	33 08	96 31	722	8 11	May, 1872	May, 1881	P. M. Scott. Aug. and Sept., 1876.
528	Deloraine	Hunt	33 07	96 01	550	2 4	Aug., 1871	Dec., 1873	S. Davis. Dec., 1872.
529	Sulphur Springs	Hopkins	33 12	95 29	.....	0 5	July, 1879	Nov., 1879	F. P. Cline.
		Franklin.†							
		Titus.†							
		Morris.†							
		Joakum.†							
		Terry.†							
		Lynn.†							

† No data.

TEXAS—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	Record. From—	Record. To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
		Garza.†							
		Kent.†							
		Stonewall.†							
		Haskell.†							
530	Camp Cooper	Throckmorton	31 01	99 00	.....	1 3	Feb., 1857	Oct., 1859	U. S. post hospital. Nov., 1857; Jan., 1858, to Apr., 1859, inclusive; Aug., 1859.
531	Fort Belknap	Young	33 08	98 46	1,000	5 10	Oct., 1852	Dec., 1858	U. S. post hospital. Feb. to June, 1858, inclusive.
532	Graham	...do	33 05	98 33	.....	2 3	Jan., 1881	Apr., 1883	Signal Service. Jan., 1883.
		Cass.†							
		Camp.†							
		Wood.†							
		Raines.†							
		Rockwell.†							
533	Mesquite	Dallas	32 49	96 31	383	4 6	Jan., 1874	July, 1880	S. D. Lawrence. Record broken. Nov., 1874; Mar., 1875; Dec., 1877, to May, 1879, inclusive; July, 1879, to Nov., 1879, inclusive.
534	Dallas	...do	32 47	96 45	468	3 4	Aug., 1869	Oct., 1887	J. T. Coit. Record much broken. Sept., 1869, to Mar., 1882, inclusive; Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; Nov., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
535	Fort Worth	Tarrant	32 40	97 25	1,100	3 9	Dec., 1849	Aug., 1853	U. S. post hospital.
536	Weatherford	Parker	32 45	97 45	.....	2 6	Apr., 1882	Oct., 1887	Signal Service. Record much broken. Oct., 1882, to May, 1883, inclusive; July to Sept., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; July, Aug., 1884; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
		Palo Pinto.†							
		Stephens.†							
537	Fort Griffin	Shackelford	32 53	99 21	.....	12 4	Aug., 1869	Apr., 1882	U. S. post hospital. Record broken. Oct., Nov., 1869; Dec., 1876; Jan., Mar., 1877.
538	Phantom Hill	Jones	32 30	99 45	2,300	1 6	Sept., 1852	Feb., 1854	U. S. post hospital.
		Fisher.†							
		Scurry.†							
		Borden.†							
		Dawson.†							
		Gaines.†							
539	Gilmer	Upshur	32 47	94 48	950	11 9	Mar., 1860	Jan., 1879	J. M. Glasco. Record broken. Jan., 1861; July, 1861, to Apr., 1868, inclusive; Feb., Mar., 1871; July, 1878.
540	Jefferson	Marion	32 12	94 20	65	0 9	July, 1869	Apr., 1870	U. S. post hospital. Mar., 1870.
541	Terrell	Kaufman	32 12	96 14	565	1 3	Mar., 1876	May, 1879	F. P. Cline. Apr., 1876, to Mar., 1878, inclusive.
		Van Zandt.†							
		Harrison.†							
542	Tyler	Smith	32 25	95 10	.....	3 2	Apr., 1882	Oct., 1887	Signal Service. Record much broken. Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
543	Longview	Gregg	32 30	94 37	.....	3 0	Apr., 1882	Oct., 1887	Signal Service. Record much broken. Nov., 1882, to Mar., 1883, inclusive; Sept., 1883, to Mar., 1884, inclusive; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887.
		Ellis.†							
544	Barnesville	Johnson	32 26	97 03	.....	0 10	Sept., 1883	June, 1884	F. S. Neely.
545	Cleburne	....do	32 20	97 16	.....	4 6	Apr., 1881	Dec., 1887	Thomas C. Osborn, M. D. May, 1881, to June, 1883, inclusive; Aug., 1883.
		Hood.†							
		Erath.†							
		Eastland.†							
		Callahan.†							
546	Abilene	Taylor	32 26	99 37	.....	2 3	Oct., 1885	Dec., 1887	Signal Service.
		Nolan.†							
		Mitchell.†							
		Howard.†							
		Martin.†							
		Andrews.†							
		Rusk.†							
		Panola.†							
		Henderson.†							

† No data.

TEXAS—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	From—	To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
547	Corsicana	Navarro	32 05	96 24	428	11 3	Oct., 1874	Dec., 1887	Signal Service. W. D. McCheeney, J. W. Smith. Record broken. Nov., 1881, to Mar., 1882, inclusive; Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; Aug., 1884; Oct., 1884, to Apr., 1886, inclusive; Oct., 1886.
548	Cross Roads	....do	30 33	97 46	672	0 9	Nov., 1859	Nov., 1860	F. S. Wade. Jan., 1860; July to Sept., 1860, inclusive.
549	Fort Graham	Hill Somervell. † Comanche. † Bosque. †	31 56	97 26	900	3 6	Mar., 1850	Aug., 1853	U. S. post hospital.
550	Larissa	Cherokee	32 01	95 19	755	0 6	Aug., 1858	Dec., 1859	F. L. Yoakum. Record much broken. Sept. to Dec., 1858, inclusive; Feb. to May, inclusive, July, Aug., and Oct., 1859.
551	Palestine	Anderson	31 47	95 35	480	6 8	Oct., 1869	Dec., 1887	Signal Service. N. S. Brooks. Record much broken. June to Sept., inclusive, and Nov., 1870; Jan., 1871, to Jan., 1882, inclusive; July, 1885.
552	El Paso / Fort Bliss	El Paso	31 44 / 31 47	106 38 / 106 30	3,830	25 9	Aug., 1850	Dec., 1887	Signal Service and U. S. post hospital. Record much broken. Sept., 1851, to June, 1854, inclusive; Mar., May, 1855; Apr. and Dec., 1857; Jan., May, Oct., 1860; Jan., 1861, to Nov., 1865, inclusive; Mar., May to Aug., 1866, inclusive; Apr., 1868, to Mar., 1869, inclusive; Feb., Apr., 1870; Aug. to Oct., 1870, inclusive; Jan., 1877, to June, 1878, inclusive.
553	Camp Concordia	....do	31 46	106 21	3,600	0 10	Apr., 1868	Mar., 1869	U. S. post hospital. May and Oct., 1868.
554	Fort Quitman	....do	31 10	105 40	3,710	3 5	Jan., 1859	Jan., 1874	U. S. post hospital. Record broken. Nov., 1860; Mar., 1871; June, 1871, to May, 1873, inclusive.
555	Fort Concho	Reeves. † Tom Greene	31 32	100 20	2,160	15 1	Aug., 1872	Nov., 1887	Signal Service and U. S. post hospital. Jan., 1877; Mar., 1886; Mar., 1887.
556	Midland	Midland	31 57	102 04	.....	2 0	Nov., 1885	Nov., 1887	J. C. Rathburn. May, 1887.
557	Fort Chadbourne	Runnels	31 58	100 15	2,120	8 7	May, 1852	Dec., 1860	U. S. post hospital. July, 1855.
558	Content	....do	29 40	96 42	350	0 7	Feb., 1873	Aug., 1873	F. Simpson.
559	Camp Colorado	Coleman	31 55	99 17	.....	3 11	Jan., 1857	Dec., 1860	U. S. post hospital. Jan., 1858.
560	Coleman City	....do	31 45	99 15	.....	5 10	July, 1877	Aug., 1883	Signal Service. July to Oct., 1881, inclusive.
		Brown. † Hamilton. † Freestone. † Shelby. † Nacogdoches. †							
561	Waco	McLennan	31 35	97 08	.....	6 8	Mar., 1867	Oct., 1887	Signal Service. Dr. E. Merrill. Record much broken. May, Oct., 1867; May, 1869, to Apr., 1874, inclusive; Dec., 1875, to Mar., 1882, inclusive; Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; Aug., 1884; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
		Limestone. †							
562	Gatesville	Coryell	31 45	97 35	.....	0 2	Apr., 1879	May, 1879	Y. S. Jenkins.
563	Fort Gates	....do	31 26	97 49	1,200	0 6	July, 1851	Dec., 1851	(?)
		San Augustine. † Leon. † Sabine. † Houston. † Concho. † McCulloch † San Saba. † Lampasas. † Falls † Angelina. † Trinity. †							
564	Fort Stockton	Pecos	30 20	102 52	4,950	17 0	Oct., 1859	June, 1886	U. S. post hospital and Signal Service. Record broken. Jan., Feb., 1860; Jan., 1861, to Dec., 1869, inclusive; Feb. to June, 1870, inclusive; Dec., 1885; Jan., 1886.

† No data.

TEXAS—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record. Length.	Record. From—	Record. To (inclusive)—	Remarks as to observers and missing records.
			° ′	° ′	*Feet.*	*Yrs. M.*			
565	Fort Davis	Presidio	30 36	103 36	4,700	19 3	Jan., 1855	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Apr., 1857; Jan., 1861, to May, 1869, inclusive; Feb., July, and Dec., 1870; Jan., Mar., 1871; May, 1871, to May, 1872, inclusive; July, Nov., 1873; Jan. to Sept., 1874, inclusive; Nov., Dec., 1874; Feb., 1875, to Aug., 1877, inclusive; Sept., Nov., 1881.
566	Belton	Bell	31 05	97 25	.....	2 9	Apr., 1882	Oct., 1887	Signal Service. Record broken. Sept., 1882, to Mar., 1883, inclusive; Oct., 1883, to Mar., 1884, inclusive; Aug., 1884; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to May, 1887, inclusive.
567	Hearne	Robertson	30 50	96 25	.....	3 1	Apr., 1882	Oct., 1887	Signal Service. Record broken. Nov., 1882, to Mar., 1883, inclusive; Aug., 1883; Nov., 1883, to Mar., 1884, inclusive; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
568	Burkeville	Jasper. † Newton. Polk. † Madison. † Milam. †	31 00	93 38	.....	0 3	Feb., 1861	Apr., 1861	Dr. N. P. West.
569	Houston	Crockett	31 25	95 25	.....	3 3	Apr., 1882	Oct., 1887	Signal Service. Record broken. Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; Nov., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
570	Fort Lancaster	..do	30 46	101 48	2,350	4 6	July, 1876	Dec., 1880	U. S. post hospital.
571	Fort Terrett	...do	30 23	100 16	1,320	1 9	Apr., 1852	Dec., 1853	Do.
572	Fort McKavett	Menard	30 48	100 06	2,060	17 9	Apr., 1852	Feb., 1883	Signal Service. U. S. post hospital. Record broken. Sept. to Dec., 1853, inclusive; Apr., 1859, to Feb., 1870, inclusive; Sept., 1870, to July, 1872, inclusive.
573	College Station	Burnet. † Tyler. † Brazos	31 39	96 16	.....	0 10	May, 1882	Apr., 1883	C. C. Georgeson. Sept., 1882; Jan., 1883.
574	Mason / Fort Mason	Mason	30 45 / 30 48	99 05½ / 99 15½	1,200†	9 11	Apr., 1852	Mar., 1882	Signal Service. U. S. post hospital. Record broken. Dec., 1853, to Feb., 1856, inclusive; Jan. to Dec., 1859, inclusive; Mar., June, July, Oct., Nov., 1860; Jan., 1861, to May, 1877, inclusive.
575	Fort Croghan	Llano	30 40	98 21	1,100	4 3	June, 1849	Aug., 1853	U. S. post hospital.
576	Huntsville	Walker	30 45	95 30	.....	4 9	Jan., 1859	Oct., 1847	Signal Service. T. Gibbs, Prof. H. C. Pritchett. Record broken. Jan., 1860, to Mar., 1882, inclusive; Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; July, 1884; Oct., 1884, to Jan., 1885, inclusive; Apr., 1886; Nov., 1886, to Apr., 1887, inclusive.
577	Austin	San Jacinto. † Williamson. † Grimes. † Kimble. † Burleson. † Travis	30 17	97 44	.....	31 3	Nov., 1851	Nov., 1887	J. Van Nostrand, Oscar Samostz. Record broken. Jan., 1852, to Feb., 1856, inclusive; Jan., 1857; July, 1867; Sept., 1876; Mar., 1880; Aug., 1882; July, 1883; Apr., July, 1887.
578	Webberville	....do	30 14	97 34	.....	0 6	Apr., 1859	Mar., 1861	Prof. C. W. Yellowby. Record broken. May to Aug., 1859, inclusive; Oct., Dec., 1859.
579	Blue Branch	Montgomery. † Lee	30 27	97 26	600	4 3	Jan., 1869	Oct., 1873	F. S. Wade, W. H. Goode. Record broken. June to Oct., 1872, inclusive; July, Aug., 1873.
589	Fredericksburgh	Gillespie. Blanco. †	30 12	98 45	.....	5 11	Apr., 1877	Feb., 1883	Signal Service.

† No data.

TEXAS—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
581	Sour Lake	Hardin	30 10	94 10	.....	2 9	Apr., 1882	Oct., 1887	Signal Service. Record broken. Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Apr., 1884, inclusive; Nov., 1884, to May, 1885, inclusive; Oct., 1885, to Apr., 1886, inclusive; Nov., 1886, to June, 1887, inclusive; Sept., 1887.
582	Washington	Liberty.† Bastrop.† Washington	30 19	96 15	360	1 11	Feb., 1857	Dec., 1859	B. H. Rucker. Record broken. Apr., June, Nov., 1857; Feb. to Oct., 1858, inclusive.
583	Lone Point	....do	30 16	96 30	400	0 3	June, 1867	Aug., 1867	M. Rutherford.
584	Union Hill	....do	30 14	96 31	542	2 4	Mar., 1858	Mar., 1861	Dr. W. H. Gantt. Record broken. May, July, 1858; May, Aug., Dec., 1859; Jan., June, July, 1860; Feb., 1861.
585	Chapel Hill	....do	30 10	96 20	542	0 5	Apr., 1866	Aug., 1866	Dr. W. H. Gantt.
586	Farm	....do	30 10	96 34	431	1 1	Apr., 1869	May, 1870	B. Combs. May, 1869.
587	Hempstead	Hays.† Waller	30 08	95 58	.....	1 7	Apr., 1882	Sept., 1884	Signal Service. Record broken. Nov., 1882, to Mar., 1883, inclusive; Oct., 1883, to Mar., 1884, inclusive.
588	Orange	Orang	30 05	93 40	.....	2 3	Apr., 1882	Oct., 1887	Signal Service. Record broken. July, 1882, to May, 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; June, July, 1884; Nov., 1884, to May, 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Aug., 1886; Nov., 1886, to June, 1887, inclusive.
589	Camp Hudson	Val Verde	29 42	101 10	.....	2 7	May, 1858	Dec., 1860	U. S. post hospital. July, 1859.
590	Fort Martin Scott	Edwards.† Kerr	30 10	99 05	1,300	2 3	Jan., 1850	Mar., 1852	U. S. post hospital.
591	Camp Verde	....do	30 00	99 10	1,400	5 9	Jan., 1857	Feb., 1869	U. S. post hospital. Record broken. Jan., 1858; Jan., 1861, to Feb., 1867, inclusive; Apr., Sept., 1867.
592	Round Top	Fayette	30 03	96 44	.....	2 4	Jan., 1859	Apr., 1861	B. Schumann.
593	Pin Oak	....do	30 00	97 09	.....	1 0	Jan., 1856	Dec., 1856	Dr. W. H. Gantt.
594	Bluff Settlement	....do	30 00	97 00	180	4 5	June, 1870	Dec., 1874	J. Fietsam. July, 1871; Dec., 1873.
595	Flatonia	....do	29 42	97 00	.....	0 1	Feb., 1878	.....	Rev. Frank Miller.
596	Beaumont	Jefferson	30 05	94 04	.....	0 11	Apr., 1882	Aug., 1884	Signal Service. Record broken. Aug., 1882, to Apr., 1883, inclusive; Aug., 1883, to Mar., 1884, inclusive, and July, 1884.
597	New Ulm	Harris.† Austin	29 52	96 11	300	15 4	July, 1872	Dec., 1887	C. Runge. Dec., 1884; Jan., 1885.
598	Comfort	Kendall	30 00	98 40	.....	2 8	Jan., 1885	Aug., 1887	F. Petersen.
599	Sisterdale	....do	29 59	98 43	1,000	1 0	Jan., 1859	Dec., 1859	B. Knapp.
600	Lockhart	Caldwell	29 55	97 44	.....	0 4	July, 1869	July, 1870	L. Woodruff. Record broken. Sept., 1869, to Feb., 1876, inclusive; Apr., May, 1870.
601	Luling	....do	29 45	97 30	720	2 9	Apr., 1882	Sept., 1887	Signal Service. Record broken. Nov., 1882, to Apr., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; July, 1884; Nov., 1884, to May, 1885, inclusive; Sept., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
602	New Braunfels	Comal	29 42	98 15	720	5 1	Jan., 1854	Dec., 1859	Prof J. C. Ervendberg. Record broken. Dec., 1856; Jan., Sept., Dec., 1857; Jan. to Apr., 1858, inclusive; July, Aug., 1858; Apr., 1859.
603	Weimar	Bandera.† Colorado	29 45	96 40	.....	3 0	Apr., 1882	July, 1887	Signal Service. Record broken. Nov., 1882, to Mar., 1883, inclusive; Nov., 1883, to Mar., 1884, inclusive; Nov., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
604	Columbus	....do	29 42	96 28	250	0 4	May, 1874	Sept., 1874	F. Simpson. Aug., 1874.
605	Oakland	....do	29 35	97 00	.....	2 4	Apr., 1870	Oct., 1872	F. Simpson. Sept., Oct., Dec., 1871.
606	Gonzales	Guadalupe.† Chambers.† Gonzales	29 32	97 32	150	1 0	Jan., 1850	Dec., 1850	Bennett.
607	San Antonio	Bexar	29 30	98 20	600	20 2	Sept., 1849	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Nov., 1852, to July, 1857, inclusive; Jan., 1861, to Dec., 1869, inclusive; Aug., 1873, to Dec., 1876, inclusive; June, July, 1883; Nov., 1883, to Apr., 1884, inclusive; Nov., 1884, to Feb., 1885, inclusive.
608	Brackettville	Fort Bend.† Kinney	29 20	100 12	.....	6 1	May, 1877	May, 1883	Signal Service.

†No data.

TEXAS—Continued.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs. M.*			
609	Fort Clark	Kinney	29 17	100 25	1,000	16 5	Aug., 1852	Aug., 1886	U. S. post hospital. Record br ken. July, 1857; Jan., 1860; Jan., 1861, to Apr., 1869, inclusive; Aug., 1873, to July, 1874, inclusive; Feb., 1878, to Dec., 1885, inclusive; May, June, 1886.
610	Fort Lincoln	Uvalde	29 22	99 33	900	1 10	Apr., 1850	July, 1852	U. S. post hospital. June to Aug., inclusive, Sept. to Dec., 1850, inclusive.
611	Uvalde	....do	29 15	99 45	.....	6 1	Apr., 1877	May, 1883	Signal Service. Jan., 1882.
612	Castroville	Medina	29 25	98 45	.....	4 8	Aug., 1877	Mar., 1882	Signal Service.
		Lavaca.†							
		Wharton.†							
613	Columbia	Brazoria	29 16	95 30	.....	1 10	June, 1881	Oct., 1887	Signal Service. Record broken. Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
614	Cedar Grove	....do	29 08	95 42	60	2 1	Mar., 1867	May, 1869	J. B. Bostwick. Aug., Sept., 1867.
615	Clear Creek	Galveston	29 32	95 06	25	0 9	Mar., 1871	Dec., 1871	George N. Leoni. July, 1871.
616	Galveston	....do	29 18	94 47	30	19 1	Jan., 1868	Dec., 1887	U. S. post hospital. D. A. Beazley. Signal Service. C. A. Smith, R. Reeder, E. O. C. McInerney. May, 1870, to Mar., 1871, inclusive.
		Wilson.†							
617	Cuero	De Witt	29 10	97 10	.....	2 3	Apr., 1883	June, 1887	Signal Service. Record broken. Nov., 1883, to Mar., 1884, inclusive; Oct., 1884, to Apr., 1885, inclusive; Nov., 1885, to Apr., 1886, inclusive; Nov., 1886, to Apr., 1887, inclusive.
618	Yorktown	....do	29 03	97 25	.....	3 5	Jan., 1869	Sept., 1872	Dr. A. C. White. Feb., Mar., 1869; Apr., 1871; Aug., 1872.
		Matagorda.†							
		Atascosa.†							
619	Helena	Karnes	28 58	97 56	600	0 2	Jan., 1857	Mar., 1857	J. C. Brightman. Feb., 1857.
		Jackson.†							
620	Eagle Pass	Maverick	28 43	100 30	.....	5 11	July, 1877	May, 1883	Signal Service.
621	Fort Duncan	....do	28 39	100 30	1,460	16 4	Oct., 1849	Oct., 1879	U. S. post hospital. Record broken. May, 1859, to July, 1860, inclusive; Jan., 1861, to May, 1873, inclusive; Jan., 1879.
622	Fort Inge	Zavalla	29 10	99 50	845	7 4	Nov., 1849	Dec., 1860	U. S. post hospital. Jan., 1851; May, 1855, to Dec., 1858, inclusive; Oct., 1860.
		Frio.†							
623	Victoria	Victoria	28 50	96 58	94	0 4	May, 1871	Aug., 1871	L. D. Heaton.
624	Goliad	Goliad	28 35	97 30	50	1 1	Jan., 1858	Oct., 1868	J. C. Brightman. Jan., 1859, to Sept., 1868, inclusive.
625	Fort Merrill	Live Oak	28 10	98 00	150	3 3	Apr., 1851	Nov., 1855	U. S. post hospital. Jan., 1852, to May, 1852, inclusive; Aug., 1852, to July, 1883, inclusive.
		Bee.†							
		Dimmit.†							
626	Fort Ewell	La Salle	28 10	99 00	200	2 0	Oct., 1852	Sept., 1854	U. S. post hospital.
		McMullen.†							
627	Lavaca	Calhoun	28 37	96 37	17	1 8	Jan., 1869	Aug., 1870	L. D. Heaton.
628	Indianola	....do	28 32	96 31	.....	14 8	May, 1872	July, 1886	Signal Service.
		Refugio.†							
629	Fort McIntosh Laredo	Webb	27 35 27 32	99 48 99 26	806 401	22 7	July, 1849	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Jan., 1859, to Aug., 1869, inclusive; May to July, 1870, inclusive; Jan., 1875, to Dec., 1876, inclusive; Sept., 1881; Jan., Feb., 1883; Apr., 1883, to Dec., 1885, inclusive.
630	Aransas Canal	Aransas	27 47	97 08	15	0 1	Nov., 1860	.....	F. Kaler.
		San Patricio.†							
		Encinal.†							
		Duval.†							
631	Corpus Christi	Nueces	27 47	97 27	20	4 5	Nov., 1845	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Oct., 1846, to July, 1849, inclusive; Jan., 1850, to Mar., 1851, inclusive; Jan., 1852, to Apr., 1854, inclusive; Oct., 1854, to July, 1855, inclusive; Apr., 1856, to May, 1883, inclusive; Sept., 1885; Nov., 1885, to Jan., 1887, inclusive.
		Japata.†							
632	Ringgold Barracks Rio Grande City	Starr	26 28 26 23	98 45 98 48	521	26 9	Sept., 1849	Dec., 1887	Signal Service and U. S. post hospital. June, 1855; Jan., 1859, to June, 1860, inclusive; Jan., 1861, to June, 1870, inclusive; Aug., 1874; Oct., 1882, to Feb., 1883, inclusive.
633	Hidalgo	Hidalgo	26 05	98 10	.....	2 5	Feb., 1879	Jan., 1882	Signal Service. Feb. to Aug., 1881, inclusive.
634	Fort Brown Brownsville	Cameron	25 50 25 53	97 37 97 26	50	28 0	Jan., 1850	Dec., 1887	Signal Service and U. S. post hospital. Record broken. Jan., 1859, to Apr., 1860, inclusive; Jan., 1861, to July, 1869, inclusive.

† No data.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
514, Fort Elliott	0.31	0.62	1886	(T)	'80 '83	0.52	1.44	1886	0.05	1880	0.61	1.86	1885	(T)	1881
515, Henrietta	1.24	2.73	1882	0.07	1883	1.41	2.23	1883	0.65	1880	1.80	2.60	1880	0.96	1881
516, Buffalo Springs						0.30									
517, Denison	2.09	5.00	1876	0.50	1877	3.44	6.89	1877	0.45	1879	2.49	5.47	1876	0.31	1879
518, Paris†															
519, Clarksville	5.39	12.25	1875	1.25	1880	5.49	10.38	1884	0.50	1872	5.08	15.50	1875	1.00	1873
520, Bonham†															
521, Honey Grove	0.70					6.80					2.50				
522, Silver Falls	(T)	(T)	1886	(T)	1887	1.07	1.07	1887	(T)	1886					
523, Fort Richardson	0.66	2.00	1869	0.00	1870	1.59	4.58	1877	0.13	1870	0.97	3.48	1876	0.00	1878
524, Jacksborough	0.73	1.96	1882	0.08	1883	1.89	4.04	1882	0.00	1879	1.23	2.24	1883	0.15	1878
525, Decatur	1.64	2.87	1882	0.85	1878	2.78	5.24	1882	0.66	1879	1.11	2.45	1880	0.23	1878
526, Pilot Point	0.33	0.75	1881	0.14	1880	1.50	5.96	1881	(T)	1878	0.72	2.72	1881	(T)	1878
527, Belmont Farm	2.56	8.40	1874	0.50	1877	5.59	18.11	1881	0.50	1872	3.97	10.50	1874	1.00	1873
528, Deloraine	1.90	4.01	1872	1.70	1873	1.17	2.00	1873	1.50	1872	1.77	3.70	1872	1.50	1873
529, Sulphur Springs†															
530, Camp Cooper						3.01					0.06				
531, Fort Belknap	0.47	2.38	1858	0.00	'55 '57	2.29	4.31	1857	0.30	1850	1.32	2.57	1856	0.10	1855
532, Graham	1.30	2.16	1882	0.43	1881	2.09	3.27	1882	1.21	1883	1.48	2.10	1883	1.13	1882
533, Mesquite	3.86	7.30	1874	0.31	1877	5.26	10.75	1880	1.75	1875	6.12	9.50	1874	2.61	1880
534, Dallas†															
535, Fort Worth	1.56	2.70	1851	0.60	1850	4.54	10.80	1851	0.30	1850	3.61	5.20	1852	1.20	1850
536, Weatherford†															
537, Fort Griffin	1.05	2.01	1880	0.04	1878	1.14	2.33	1882	0.00	1870	0.75	1.43	1871	(T)	1878
538, Phantom Hill	0.26	0.52	1853	0.00	1854	0.80	1.30	1853	0.30	1854	0.54				
539, Gilmer	3.43	4.95	1875	0.58	1879	3.21	7.90	1874	0.64	1870	3.44	5.81	1874	1.00	1860
540, Jefferson	1.50					3.30									
541, Terrell	8.60†					0.12					11.37†	22.12†	1876	0.62	1879
542, Tyler†															
543, Longview†															
544, Barnesville	3.42					4.38					1.12				
545, Cleburne	1.90	4.48	1885	0.43	1887	2.15	4.12	1884	1.01	1885	3.18	6.25	1884	0.32	1887
546, Abilene	0.09	0.11	1880	0.06	1887	0.91	1.21	1887	0.61	1886	1.25	2.47	1886	0.03	1887
547, Corsicana	2.94	6.72	1879	0.14	1887	2.57	6.84	1877	0.52	1879	2.79	4.81	1877	0.75	1887
548, Cross Roads†						5.11					0.89				
549, Fort Graham	1.42	1.83	1853	0.64	1852	5.24	6.86	1851	3.61	1853	4.55	8.75	1852	1.35	1850
550, Larissa	7.75														
551, Palestine	2.82	7.77	1885	0.52	1887	3.07	4.01	1883	0.52	1870	2.88	5.35	1883	0.50	1870
552, Fort Bliss and El Paso	0.32	1.57	1879	0.00	(1)	0.43	5.55	1856	0.00	(1)	0.29	2.09	1883	0.00	(1)

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
514, Fort Elliott	2.14	4.67	1885	0.16	1880	5.32	7.48	1882	0.23	1886	3.79	9.82	1885	0.10	1881
515, Henrietta	2.86	4.87	1881	0.80	1882	2.64	3.30	1880	1.51	1879	3.26	5.24	1880	0.88	1881
516, Buffalo Springs†															
517, Denison	3.95	8.08	1877	1.95	1880	4.65	8.03	1881	1.52	1879	4.89	10.00	1880	0.00	1881
518, Paris	2.02	2.79	1884	1.25	1883	5.98	8.80	1884	2.52	1885	3.83	6.01	1884	2.09	1887
519, Clarksville	6.56	17.00	1874	1.25	1881	6.71	19.50	1873	0.75	1880	5.20	17.75	1873	0.25	1881
520, Bonham†															
521, Honey Grove	8.50	8.60	1885	8.40	1884	5.85	6.80	1884	4.90	1885	3.65				
522, Silver Falls	1.90	1.93	1887	1.87	1886	2.13	4.25	1887	0.01	1886	1.02	1.07	1886	0.98	1887
523, Fort Richardson	2.96	7.40	1868	0.10	1878	3.10	9.88	1873	0.70	1870	3.29	9.10	1869	0.31	1868
524, Jacksborough	2.00	3.26	1879	0.68	1878	3.37	6.09	1880	1.29	1879	4.10	10.91	1878	0.04	1881
525, Decatur	2.21	3.41	1877	0.96	1878	4.11	5.82	1881	2.75	1879	3.40	7.80	1878	0.01	1881
526, Pilot Point	1.06	3.05	1879	0.04	1878	2.17	5.01	1880	0.22	1879	3.50	6.22	1880	0.05	1879
527, Belmont Farm	5.22	17.00	1874	2.00	1873	8.67	34.85	1881	3.81	1878	5.18	17.75	1873	1.00	1874
528, Deloraine	2.97	7.20	1872	1.70	1873	3.73	7.70	1873	3.50	1872	4.50	6.00	1873	3.00	1872
529, Sulphur Springs†															
530, Camp Cooper	0.42					2.46	2.50	1857	2.42	1859	2.74	3.10	1857	2.40	1859
531, Fort Belknap	0.88	2.03	1853	0.14	1857	4.21	6.19	1853	2.91	1857	3.98	8.33	1854	1.39	1856
532, Graham	1.73	4.19	1881	0.37	1882	2.86	2.95	1881	2.76	1882	2.03	2.19	1881	1.87	1882
533, Mesquite	4.91	6.16	1876	2.12	1874	3.96	5.25	1875	2.12	1876	4.19	6.00	1876	1.62	1875
534, Dallas	3.75	5.55	1884	1.69	1883	4.77	8.25	1884	0.02	1886	3.77	9.69	1885	1.02	1882
535, Fort Worth	4.30	6.61	1851	0.73	1852	6.60	9.27	1851	4.27	1852	3.73	7.30	1850	0.22	1851
536, Weatherford	1.70	1.89	1882	1.50	1884	8.29	27.94	1884	0.00	1886	3.84	12.16	1884	0.68	1882
537, Fort Griffin	1.69	3.71	1881	0.14	1882	3.00	6.42	1880	0.08	1879	3.78	9.83	1878	0.00	1871
538, Phantom Hill	0.45					2.85					2.90				
539, Gilmer	4.73	7.21	1870	1.07	1873	4.74	10.41	1873	1.11	1874	3.15	9.71	1873	0.43	1860
540, Jefferson	0.00														
541, Terrell	11.62†	19.75†	1879	3.50	1876	6.62	8.50	1879	4.75	1878	17.12†				
542, Tyler	4.20	5.79	1884	2.12	1882	6.13	17.47	1884	0.60	1886	2.98	6.78	1883	0.09	1882
543, Longview	0.25	0.38	1884	0.06	1882	2.71	6.02	1887	0.00	1886	3.01	5.86	1885	0.02	1882
544, Barnesville	7.00					11.12					11.09				
545, Cleburne	3.74	6.41	1885	2.34	1887	4.84	9.01	1885	0.00	1886	5.09	10.09	1884	2.17	1886
546, Abilene	2.06	2.45	1887	1.67	1886	2.14	3.95	1887	1.33	1886	3.34	3.38	1886	3.26	1887
547, Corsicana	3.77	11.50	1879	0.44	1882	5.22	12.58	1894	0.00	'83 '86	2.74	5.42	1878	0.60	1882
548, Cross Roads	1.59					0.20									
549, Fort Graham	4.53	7.88	1851	2.00	1853	2.90	3.35	1853	2.57	1850	2.71	4.83	1850	0.32	1851
550, Larissa											1.75				
551, Palestine	4.30	7.30	1884	0.74	1887	5.85	17.25	1884	0.30	1886	2.80	6.33	1883	0.83	1882
552, Fort Bliss and El Paso	0.10	0.91	1884	0.00	(1)	0.21	1.83	1881	0.00	(1)	0.59	2.63	1885	0.00	'67 '80

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
514, Fort Elliott	2.66	5.65	1882	0.92	1887	3.62	6.56	1883	0.49	1881	2.00	4.97	1883	0.54	1880
515, Henrietta	2.24	4.51	1882	0.36	1879	3.98	6.24	1879	0.94	1881	2.45	4.32	1882	0.60	1879
516, Buffalo Springs†															
517, Denison	5.00	10.41	1875	0.74	1877	3.23	9.20	1875	0.26	1881	3.80	9.04	1882	0.24	1879
518, Paris	2.38	5.15	1882	0.48	1884	2.40	5.79	1883	1.04	1886	3.02	6.36	1886	0.10	1883
519, Clarksville	5.21	15.50	1875	0.12	1881	2.26	5.50	1875	0.00	80–81	3.14	10.00	1874	0.12	1879
520, Bonham†															
521, Honey Grove	2.21														
522, Silver Falls	2.48	3.06	1886	1.89	1887	2.90	3.43	1886	2.37	1887	3.38	5.58	1886	1.19	1887
523, Fort Richardson	1.91	3.28	1878	0.37	1874	2.48	7.85	1868	0.00	1874	3.22	8.16	1874	1.24	1875
524, Jacksborough	4.65	10.51	1882	0.12	1881	2.25	3.90	1882	0.58	1881	5.79	13.95	1880	1.21	1879
525, Decatur	5.32	15.23	1882	0.70	1879	1.60	4.63	1882	0.04	1881	4.86	9.13	1880	0.37	1878
526, Pilot Point	2.59	6.00	1878	0.03	1879	1.12	2.14	1879	0.16	1878	3.16	7.63	1880	0.03	1879
527, Belmont Farm	2.22	15.50	1873	0.15	1879	1.62	7.05	1875	1.05	1877	3.36	10.00	1874	2.25	1879
528, Deloraine	1.10	1.70	1872	1.60	1873	0.11	0.50	1873	0.00	1872	0.88	2.75	1871	0.20	1872
529, Sulphur Springs	6.00					3.75					0.75				
530, Camp Cooper	6.25	9.30	1857	3.20	1859	9.35					1.64	2.50	1857	0.79	1859
531, Fort Belknap	2.49	6.42	1857	0.00	1854	2.97	6.85	1856	0.12	1853	2.77	10.20	1856	0.00	1855
532, Graham	5.24	9.56	1882	0.93	1881	5.16	8.65	1882	1.66	1881	6.58	9.33	1882	3.83	1881
533, Mesquite	3.96	8.37	1880	1.66	1874	5.70	12.41	1875	1.50	1877	3.55	5.67	1874	0.37	1876
534, Dallas	3.05	6.96	1882	0.00	1884	3.44	7.98	1887	1.00	1869	2.53	6.29	1886	0.00	1884
535, Fort Worth	2.38	5.72	1853	0.16	1851	2.69	6.41	1852	0.06	1851	2.06	5.60	1851	0.06	1851
536, Weatherford	2.45	7.08	1882	0.74	1887	2.83	3.82	1887	1.47	1886	1.94	3.83	1886	0.29	1884
537, Fort Griffin	2.69	7.84	1878	0.36	1871	1.14	4.40	1870	0.25	1881	2.73	5.05	1870	0.15	1871
538, Phantom Hill	1.15					0.03					3.55	4.82	1852	0.28	1853
539, Gilmer	3.61	9.33	1870	0.48	1860	2.51	6.01	1875	0.33	1877	2.83	6.65	1874	0.13	1876
540, Jefferson	9.43					0.82					1.00				
541, Terrell	1.00					4.00					0.28				
542, Tyler	2.46	6.61	1882	0.00	1884	2.98	9.36	1887	0.26	1883	3.12	4.75	1886	1.75	1883
543, Longview	1.94	5.62	1885	0.03	1884	0.82	2.31	1887	0.08	1883	3.47	6.08	1885	0.03	1882
544, Barnesville											1.00				
545, Cleburne	1.65	3.17	1887	0.32	1884	3.90	16.30	1887	0.51	1885	2.33	4.20	1886	0.00	1884
546, Abilene	2.10	2.71	1887	1.48	1886	1.56	2.03	1886	1.10	1887	3.40	4.17	1886	2.64	1887
547, Corsicana	2.39	3.82	1878	0.00	1884	2.62	11.70	1882	0.02	1883	2.30	3.23	1878	0.04	1884
548, Cross Roads											1.52				
549, Fort Graham	2.15	4.90	1852	0.11	1851	2.06	3.95	1850	0.21	1851	0.80	1.53	1852	0.26	1851
550, Larissa						0.10					1.31				
551, Palestine	2.83	6.52	1882	0.06	1884	2.44	5.32	1882	0.30	1883	3.70	7.12	1886	1.99	1883
552, Fort Bliss and El Paso	1.69	8.18	1881	0.00	1876	2.05	5.14	1869	0.00	1872	1.88	7.22	1885	0.00	(1)

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
514, Fort Elliott	2.82	5.54	1884	0.60	1885	0.54	2.14	1884	0.04	1883	0.81	3.05	1884	0.08	1887	25.14	37.07	1885	16.16	1881
515, Henrietta	1.48	2.38	1881	0.38	1879	1.36	2.13	1881	0.34	1879	0.67	1.41	1881	0.06	1882	25.39	29.25	1882	22.73	1881
516, Buffalo Springs						0.70					0.40									
517, Denison	3.67	10.74	1877	0.15	1875	3.13	5.01	1877	0.62	1878	2.36	5.07	1875	0.82	1880	42.70	52.64	1877	20.45	1879
518, Paris	2.84	5.80	1882	0.82	1886															
519, Clarksville	3.46	10.13	1883	0.05	1874	3.41	13.00	1873	0.95	1883	4.71	13.50	1873	0.39	1871	56.62	109.78	1873	46.56	1872
520, Bonham						0.68					2.09									
521, Honey Grove	1.92					0.60					4.30									
522, Silver Falls	2.77	3.44	1886	2.10	1887	0.17	0.31	1887	0.03	1886	(T)					26.26	33.75	1868	26.25	1874
523, Fort Richardson	1.78	9.86	1877	0.10	1869	1.82	3.00	1868	0.58	1875	2.48	4.76	1874	0.68	1876	32.39				
524, Jacksborough	2.78	4.97	1880	0.85	1875	1.99	4.40	1878	0.45	1879	1.61	3.29	1877	0.16	1882	32.71	34.01	1881	19.87	1879
525, Decatur	1.75	4.16	1881	0.50	1878	2.48	5.68	1877	0.45	1879	1.42	2.47	1881	0.60	1879	22.17	27.90	1880	6.30	1879
526, Pilot Point	3.12	10.42	1877	0.09	1878	2.22	6.33	1877	0.14	1879	0.68	1.30	1878	0.13	1879	48.11	62.99	1873	42.13	1874
527, Belmont Farm	2.78	12.00	1877	0.05	'74 '75	3.17	13.00	1873	0.80	1879	3.77	13.50	1873	1.81	1878	20.08				
528, Deloraine	1.90	4.46	1871	1.50	1873	1.02	2.60	1871	0.50	1872	0.53	1.40	1873	0.20	1871					
529, Sulphur Springs	0.12					2.41														
530, Camp Cooper	3.38	6.75	1857	0.01	1859						3.85									
531, Fort Belknap	2.92	5.90	1852	0.59	1854	2.65	7.30	1857	0.05	1854	1.10	4.56	1857	0.05	'52 '54	28.05	41.61	1857	19.21	1855
532, Graham	1.98	2.40	1881	1.55	1882	1.89	2.56	1882	1.21	1881	1.36	2.31	1881	0.40	1882	35.70	43.61	1882	25.11	1881
533, Mesquite	1.94	5.50	1877	0.00	1874	3.81	5.75	1876	1.67	1875	4.21	8.18	1874	1.00	1879	51.47				
534, Dallas	2.87	7.32	1882	0.72	1885															
535, Fort Worth	3.29	5.40	1852	2.24	'50 '51	4.14	4.92	1851	2.60	1852	2.00	5.10	1850	0.10	1852	40.90	43.36	1852	37.95	1850
536, Weatherford	2.25	4.11	1887	0.21	1886															
537, Fort Griffin	1.95	7.84	1877	0.56	1878	1.60	4.54	1877	0.30	1879	2.11	4.86	1877	0.51	1879	23.63	35.01	1870	12.03	1873
538, Phantom Hill	3.41	4.81	1852	2.01	1853	1.34	2.45	1852	0.23	1853	0.94	1.87	1853	0.00	1852	18.22				
539, Gilmer	3.27	9.59	1860	0.24	1874	3.52	10.67	1860	0.39	1878	3.76	6.79	1874	0.49	1871	42.20	52.68	1873	31.89	1877
540, Jefferson	2.16					3.97					3.09									
541, Terrell	1.12					2.50					2.25									
542, Tyler	2.18	7.16	1882	0.10	1886															
543, Longview	4.33	10.23	1885	2.09	1882															
544, Barnesville	7.25					0.04					5.75									
545, Cleburne	2.35	6.50	1883	0.37	1886	1.70	3.00	1884	1.00	1883	2.45	5.75	1883	0.05	1886	35.28	41.26	1887	20.78	1886
546, Abilene	3.21	4.77	1887	2.24	1886	0.58	0.87	1887	0.23	1885	0.85	1.58	1887	(T)	1886	21.49	24.63	1887	19.14	1866
547, Corsicana	2.97	6.81	1877	0.07	1874	3.71	6.21	1877	2.40	1875	3.26	9.52	1874	0.24	1886	37.28	53.89	1877	31.29	1887
548, Cross Roads	1.20					1.08	3.85	1860	0.45	1859	3.40									
549, Fort Graham	4.24	5.25	1851	3.69	1852	4.73	7.40	1851	1.09	1850	5.25	11.03	1850	0.31	1852	40.58				
550, Larissa						6.13					6.43									
551, Palestine	3.79	9.96	1882	1.47	1885	4.00	8.63	1882	1.42	1886	4.01	6.94	1884	0.45	1886	42.47				
552, F. Bliss & El Paso	0.86	5.15	1884	0.00	(1)	0.53	4.60	1850	0.00	(1)	0.46	2.07	1884	0.00	(2)	9.34	21.81	1856	2.84	1867

†No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
553, Camp Concordia	0.90					1.20					0.07				
554, Fort Quitman	0.19	6.30	1874	0.13	1859	0.52	1.20	1859	0.00	1871	0.01	0.01	1859	0.00	1860
555, Fort Concho	0.80	4.03	1885	0.00	'78 '87	0.76	3.38	1882	0.00	'79 '83	0.98	1.60	1873	0.12	1875
556, Midland	0.01	0.02	1886	0.00	1887	0.16	0.33	1886	(T)	1887	0.22	0.43	1886	0.00	1887
557, Fort Chadbourne	0.94	1.57	1858	0.00	1854	1.37	2.50	1855	0.23	1859	0.85	2.27	1856	0.05	1860
558, Content						1.63					2.90				
559, Camp Colorado	0.92	1.75	1860	0.00	1857	0.75	2.15	1860	0.00	'57 '59	0.63	1.83	1858	0.00	1857
560, Coleman City	1.04	2.36	1885	0.09	1883	1.52	3.90	1882	0.26	1879	1.72	3.69	1880	0.03	1878
561, Waco	2.10	5.10	1869	0.70	1869	2.07	3.00	1869	2.20	1868	4.98	10.60	1868	4.50	1869
562, Gatesville†															
563, Fort Gates†															
564, Fort Stockton	0.29	0.76	1879	0.00	(1)	0.52	2.63	1877	0.00	'71 '80	0.86	7.78	1885	0.00	1873
565, Fort Davis	0.50	3.00	1858	0.00	(1)	0.43	1.86	1856	0.00	(1)	0.42	2.32	1856	0.00	'59 '60
566, Belton†															
567, Hearne†															
568, Burkeville	1.45					4.35					5.95				
569, Houston†															
570, Fort Lancaster	1.30	2.95	1858	0.15	1857	0.41	1.15	1858	0.00	1859	0.35	0.72	1858	0.00	1859
571, Fort Terrett	0.80					1.54					1.15				
572, Fort McKavett	0.92	2.67	'56 '80	0.01	1854	1.57	5.56	1856	0.06	1859	1.20	3.60	1858	0.08	1855
573, College Station						1.90					4.89				
574, Fort Mason and Mason	1.17	3.74	1882	0.37	1881	1.64	2.93	1882	0.20	1860	1.16	1.95	1858	0.80	1857
575, Fort Croghan	1.51	1.97	1853	1.00	1850	4.61	6.52	1853	0.90	1850	4.72	9.18	1852	3.07	1853
576, Huntsville	2.25	2.31	1856	2.20	1859	2.20	3.05	1886	0.54	1859	3.58	4.51	1885	2.35	1859
577, Austin	2.79	18.11	1882	0.01	1867	3.04	8.27	1884	0.10	1873	3.24	8.90	1882	0.30	1857
578, Webberville	3.00					0.50					2.62				
579, Blue Branch	4.40	9.32	1869	0.90	1870	2.30	3.97	1872	0.30	1870	3.41	5.30	1869	1.20	1871
580, Fredericksburgh	1.02	3.54	1882	0.08	1879	1.65	3.20	1882	0.59	1881	1.46	2.27	1879	0.79	1878
581, Sour Lake†															
582, Washington	4.14	4.18	1859	4.10	1858	0.76	1.52	1857	0.00	1859	1.40	2.79	1849	0.02	1857
583, Lone Point†															
584, Union Hill	5.87	7.43	1861	4.31	1859	2.40	4.25	1860	0.55	1869	2.63	6.42	1858	0.81	1861
585, Chapel Hill†															
586, Farm	2.75					0.01					1.20				
587, Hempstead†															
588, Orange†															
589, Camp Hudson	0.76	0.93	1860	0.60	1859	0.13	0.23	1860	0.02	1859	0.11	0.20	1860	0.02	1859
590, Fort Martin Scott	0.80	1.07	1850	0.60	1852	2.98	5.14	1851	0.69	1850	5.82	12.40	1852	1.57	1850
591, Camp Verde	1.19	2.90	1869	0.00	'57 '86	1.41	3.50	1860	0.00	1857	2.47	7.07	1867	0.00	1857

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
553, Camp Concordia	0.10										0.00				
554, Fort Quitman	0.14	0.35	1859	0.00	1871	0.15	0.26	1871	0.00	1859	1.57	4.59	1873	0.04	1860
555, Fort Concho	1.27	4.60	1884	0.00	'73 '83	2.83	9.83	1884	0.00	'76 '78	2.20	6.40	1873	0.10	1881
556, Midland	0.70	1.11	1887	0.29	1886	3.41					1.46	1.51	1887	1.42	1886
557, Fort Chadbourne	1.53	3.89	1859	0.20	1856	3.39	6.48	1853	0.01	1860	2.55	5.48	1853	0.50	1858
558, Content	1.40					7.25					11.35				
559, Camp Colorado	2.42	6.00	1860	0.00	1857	1.14	2.54	1858	0.00	1857	1.22	2.30	1860	0.00	1857
560, Coleman City	1.67	2.68	1879	0.24	1882	3.67	5.74	1883	0.72	1878	3.11	7.90	1878	0.02	1881
561, Waco	3.44	6.50	1867	0.01	1882	4.17	12.44	1885	0.00	1886	1.60	3.10	1874	0.00	1875
562, Gatesville	4.85					4.11									
563, Fort Gates†															
564, Fort Stockton	0.41	1.45	1860	0.00	(1)	1.58	2.44	1885	0.05	1874	2.23	4.40	1873	0.30	1860
565, Fort Davis	0.60	3.58	1855	0.00	(1)	1.07	6.31	1881	0.04	'70 '82	1.98	6.82	1873	0.07	1881
566, Belton	2.66	5.39	1884	0.83	1882	3.85	7.11	1884	0.00	1886	1.03	3.55	1883	0.06	1884
567, Hearne	3.37	4.26	1884	2.18	1883	5.04	10.10	1884	0.00	1886	1.08	3.93	1883	0.00	1885
568, Burkeville†															
569, Houston	2.47	4.39	1884	0.70	1882	6.16	16.88	1884	0.05	1886	4.94	7.81	1887	1.07	1882
570, Fort Lancaster	2.51	3.45	1859	1.02	1857	1.98	4.25	1858	0.08	1860	3.59	5.97	1858	0.15	1860
571, Fort Terrett	0.97	1.08	1852	0.86	1853	3.98	5.15	1852	2.80	1853	5.14	6.06	1853	4.27	1852
572, Fort McKavett	0.95	2.47	1879	0.18	1873	2.64	5.26	1881	0.43	1857	2.06	7.51	1870	0.07	1881
573, College Station	3.44					4.26					0.40				
574, Fort Mason and Mason	2.25	6.89	1860	0.26	1856	3.01	8.94	1852	0.67	1879	2.00	7.58	1853	0.00	1881
575, Fort Croghan	3.88	7.05	1851	2.28	1853	3.01	5.00	1850	1.06	1851	3.33	5.60	1850	1.06	1851
576, Huntsville	3.12	7.45	1885	0.82	1859	4.89	13.65	1884	0.60	1886	2.81	4.24	1883	1.39	1882
577, Austin	2.96	8.60	1883	0.49	1859	3.76	8.80	1858	0.18	1860	3.12	8.41	1873	0.02	1862
578, Webberville	0.50														
579, Blue Branch	4.34	12.30	1872	1.70	1871	5.25	8.80	1870	3.44	1869	4.40	11.60	1873	0.81	1871
580, Fredericksburgh	3.14	5.20	1879	0.78	1882	4.22	6.30	1881	0.61	1879	1.96	3.89	1878	0.00	1881
581, Sour Lake	1.24	1.42	1882	1.06	1883	4.63	6.88	1882	0.01	1886	5.36	7.59	1883	1.70	1882
582, Washington	0.40					1.26	1.30	1859	1.22	1857	5.20				
583, Lone Point†											2.69				
584, Union Hill	0.97	1.62	1860	0.29	1858	0.03					3.10	3.88	1859	2.33	1858
585, Chapel Hill	0.90					5.15					4.05				
586, Farm	6.78					7.85					3.50				
587, Hempstead	2.17	3.48	1883	0.77	1882	8.52	14.60	1881	4.90	1883	0.87	1.19	1883	0.52	1882
588, Orange	2.99	3.17	1882	2.80	1884	1.08	3.20	1884	0.00	1882	0.26	0.48	1886	0.00	1882
589, Camp Hudson	1.42	1.81	1860	1.03	1859	1.60	3.00	1859	0.00	1860	2.13	3.45	1858	0.72	1859
590, Fort Martin Scott	6.48	8.37	1851	4.60	1850	2.31	3.45	1850	1.18	1851	5.18	10.28	1850	0.08	1851
591, Camp Verde	1.34	2.97	1860	0.00	1857	2.30	8.22	1867	0.00	'57 '60	2.37	5.90	1859	0.40	1857

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
553, Camp Concordia	1.90					1.16					1.63				
554, Fort Quitman	1.68	3.84	1870	0.41	1860	2.39	5.31	1870	0.11	1860	2.37	5.90	1870	0.06	1873
555, Fort Concho	2.26	7.60	1880	0.36	1886	2.50	8.96	1882	0.20	1881	3.00	7.20	1880	0.44	1873
556, Midland	0.75	1.07	1887	0.43	1886	1.62	2.02	1886	1.21	1887	0.86	1.47	1886	0.25	1887
557, Fort Chadbourne	1.71	5.98	1852	0 08	1860	2.27	4.30	1854	0.43	1858	3.30	7.24	1859	0.29	1860
558, Content	9.40					2.00									
559, Camp Colorado	1.03	2.33	1858	0.41	1857	5.44	14.39	1860	1.77	1858	4.27	8.60	1859	1.40	1858
560, Coleman City	3.99	7.60	1878	0.87	1879	2.28	5.52	1882	1.06	1878	4.51	7.08	1877	0.37	1879
561, Waco	1.95	5.27	1882	0.06	1887	3.05	6.89	1887	0.00	1874	3.91	7.67	1882	1.10	1864
562, Gatesville†															
563, Fort Gates	0.49					2.34					0.02				
564, Fort Stockton	1.87	7.22	1880	0.00	1860	2.62	8.96	1870	0.15	1874	3.58	14.68	1883	0.00	1873
565, Fort Davis	3.43	10.11	1880	0.35	1884	3.97	9.17	1882	1.77	1869	2.97	8.49	1859	0.10	1869
566, Belton	1.50	2.95	1882	0.11	1884	1.93	3.77	1882	0.05	1883	2.87	4.89	1885	0.24	1883
567, Hearne	1.47	2.70	1885	0.00	1884	1.81	3.25	1882	0.40	1885	4.12	9.16	1885	1.65	1883
568, Burkeville†															
569, Houston	2.56	4.89	1882	1.37	1886	3.45	8.57	1887	0.37	1883	6.93	12.83	1886	2.93	1882
570, Fort Lancaster	1.96	5.00	1858	0.04	1860	3.46	6.38	1860	0.00	1859	4.88	10.85	1859	0.43	1860
571, Fort Terrett	3.36	3.68	1853	3.04	1852	1.72	1.83	1853	1.60	1852	2.91	5.72	1852	0.10	1853
572, Fort McKavett	2.87	6.78	1880	(T)	1879	2.50	7.54	1859	0.04	1854	3.79	10.97	1874	0.07	1855
573, College Station	1.26					3.90									
574, Fort Mason and Mason	3.17	6.64	1852	0.60	1879	2.85	13.90	1860	0.53	1881	3.92	10.39	1880	0.29	1877
575, Fort Croghan	3.39	5.09	1853	1.60	1850	1.08	3.09	1852	0.20	1853	2.24	5.96	1852	0.45	1850
576, Huntsville	1.65	2.59	1885	0.99	1882	1.55	3.13	1882	0.33	1884	3.77	5.35	1885	2.00	1883
577, Austin	2.78	10.13	1880	0.00	1871	2.73	10.88	1860	0.00	1865	4.42	12.78	1874	0.00	1872
578, Webberville											10.75				
579, Blue Branch	3.70	8.80	1869	0.10	1871	1.27	1.80	1869	0.30	1871	2.26	4.70	1873	0.70	1869
580, Fredericksburgh	2.95	5.40	1880	0.55	1879	2.28	4.55	1880	0.19	1877	3.73	12.25	1880	0.38	1878
581, Sour Lake	2.06	5.67	1882	0.13	1886	4.38	13.66	1882	0.39	1887	6.13	9.11	1885	1.75	1881
582, Washington	1.51	2.04	1859	0.98	1857	2.36	2.85	1857	1.87	1859	4.67	7.15	1859	2.19	1857
583, Lone Point	8.31					11.62									
584, Union Hill	1.72					2.73	4.96	1860	0.50	1858	2.65	4.19	1859	1.31	1860
585, Chapel Hill	2.90					5.35									
586, Farm	5.45					0.07					4.91				
587, Hempstead	1.70	3.05	1882	0.01	1884	1.10	1.91	1883	0.03	1884	3.11	4.05	1884	2.38	1883
588, Orange	0.30	0.40	'83 '87	0.02	1886	2.61	7.00	1885	0.18	1884	1.72	4.17	1887	0.14	1883
589, Camp Hudson	0.08	0.15	1860	0.00	1858	3.33	6.99	1860	1.32	1859	0.99	1.73	1859	0.10	1860
590, Fort Martin Scott	1.25	1.71	1850	0.80	1851	1.28	1.20	1851	0.37	1850	1.31	1.44	1851	1.18	1850
591, Camp Verde	2.31	7.80	1867	0.28	1860	5.13	18.96	1860	0.05	1858	4.47	11.85	1857	0.50	1858

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
553, Camp Concordia						0.65					0.50									
554, Fort Quitman	0.50	1.20	1870	0.12	1860	0.47	1.18	1873	0.00	1870	0.39	0.73	1860	0.13	1859	10.38				
555, Fort Concho	1.49	6.76	1883	0.00	(1)	0.78	2.92	1874	0.00	(1)	0.15	5.85	1884	0.00	(1)	19.02	23.80	1874	18.42	1873
556, Midland	1.46	2.15	1887	0.76	1886	0.13	0.38	1887	0.00	1886	0.08	0.15	1885	0.00	1886	10.86				
557, Ft. Chadbourne	2.03	3.64	1852	0.19	1860	1.70	6.30	1854	0.16	1859	1.21	2.99	1857	0.00	'52 '55	22.85	34.27	1884	12.83	1860
558, Content†																				
559, Camp Colorado	1.74	2.65	1858	0.63	1860	2.46	6.92	1860	0.00	1859	2.08	4.19	1857	0.50	1859	24.10	40.27	1860	16.64	1857
560, Coleman City	2.28	4.33	1877	0.96	1879	1.58	2.11	1878	0.08	1879	2.33	8.42	1877	0.96	1878	29.70	35.83	1880	17.99	1879
561, Waco	1.85	4.80	1868	0.00	1874	2.81	5.00	1874	0.10	1867	5.59	9.50	1874	2.30	1867	37.52				
562, Gatesville†																				
563, Fort Gates	2.62					5.39					2.84									
564, Fort Stockton	1.25	6.25	1884	0.17	1878	0.74	1.76	1880	0.00	1859	0.85	3.45	1874	0.00	'59 '73	17.10	33.40	1880	5.16	1871
565, Fort Davis	1.46	6.18	1879	0.00	'58 '70	0.44	1 84	1855	0.00	(1)	0.44	1.88	1860	0.00	(1)	17.71	25.94	1856	8.52	1860
566, Belton	0.87	1.56	1886	0.12	1884															
567, Hearne	2.56	4.70	1882	0.95	1885															
568, Burkeville																				
569, Houston	3.37	5.56	1882	0.67	1886															
570, Fort Lancaster	2.01	7.16	1857	0.00	1860	0.93	2.71	1857	0.00	1859	1.97	7.20	1857	0.00	1856	26.25	39.58	1857	13.37	1860
571, Fort Terrett	4.21	4.50	1853	3.92	1852	0.64	1.23	1852	0.04	1853	0.76	1.53	1853	0.00	1852	27.18				
572, Fort McKavett	2.24	7.21	1881	0.12	1882	1.53	3.55	1882	0.49	1858	1.64	6.24	1874	0.00	'55 '78	22.97	40.03	1852	16.18	1855
573, College Station	2.79					4.96					0.38									
574, Fort Mason and Mason	2.22	4.46	1857	0.85	1856	1.33	3.90	1878	0.05	1858	1.80	6.70	1857	0.01	1852	26.52	42.80	1852	13.16	1879
575, Fort Croghan	2.11	3.52	1851	0.28	1850	3.89	9.80	1851	1.02	1850	2.86	7.40	1851	0.57	1852	36.63	45.71	1852	25.60	1850
576, Huntsville	3.09	8.62	1882	0.00	1886	1.40	2.26	1885	0.53	1859	3.38	3.88	1885	2.87	1859	33.69				
577, Austin	3.28	15.14	1880	0.12	1878	2.99	7.52	1874	0.00	1861	2.27	7.72	1874	0.22	1856	37.38	46.52	1874	22.18	1862
578, Webberville						0.00														
579, Blue Branch	4.52	10.00	1870	0.70	1873	2.30	3.30	1871	1.60	1869	2.99	5.80	1872	0.35	1871	41.14	45.12	1869	32.46	1871
580, Fredericksb'gh	2.38	3.93	1877	0.50	1878	2.19	5.09	1880	0.38	1879	1.40	4.79	1877	0.21	1879	28.38	47.23	1880	18.27	1879
581, Sour Lake	4.57	9.45	1886	0.69	1883															
582, Washington	3.08	4.42	1857	1.74	1859	0.82	1.65	1858	0.00	1859	4.63	7.70	1857	0.65	1859	30.23				
583, Lone Point†																				
584, Union Hill	4.78	11.29	1858	1.50	1860	1.67	3.62	1860	0.05	1859	2.56	2.60	1860	2.52	1858	31.11				
585, Chapel Hill†																				
586, Farm	5.50					1.60					4.55					44.17				
587, Hempstead	5.73																			
588, Orange	1.24	5.40	1887	0.00	1886															
589, Camp Hudson	0.97	2.87	1859	0.00	1860	0.19	0.33	1860	0.07	1858	0.42	0.90	1860	0.05	1858	12.13	13.85	1860	11.88	1859
590, Ft. Martin Scott	1.07	1.15	1851	0.99	1850	2.68	3.87	1850	1.50	1851	1.87	2.74	1850	1.00	1851	33.03				
591, Camp Verde	1.89	3.96	1857	0.00	1860	1.94	4.40	1867	0.00	1859	2.45	7.11	1857	0.50	1859	29.27	37.95	1860	18.60	1858

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
592, Round Top	4.35	6.70	1861	1.11	1860	2.36	3.80	1860	0.62	1859	1.82	2.14	1861	1.25	1859
593, Pin Oak	5.00					5.50					10.00				
594, Bluff Settlement	2.58	4.00	1873	1.45	1874	1.28	3.18	1874	0.75	1872	3.18	4.80	1873	1.40	1872
595, Flatonia						3.74									
596, Beaumont†															
597, New Ulm	4.14	10.56	1882	1.09	1887	4.53	10.94	1882	1.06	1885	5.07	18.13	1883	1.27	1887
598, Comfort	1.05	2.59	1885	0.00	1887	0.90	1.30	1886	0.12	1885	1.73	3.56	1886	0.35	1887
599, Sisterdale	1.02					0.45					1.14				
600, Lockhart											3.00				
601, Luling†															
602, New Braunfels	1.52	1.39	1859			2.03	3.50	1857	0.64	1859	1.00	1.67	1856	0.06	1857
603, Weimar†															
604, Columbus†															
605, Oakland	2.39	2.48	1871	2.30	1872	1.77	2.05	1871	1.50	1872	1.68	1.75	1871	1.60	1872
606, Gonzales	5.60					5.30					3.00				
607, San Antonio	1.22	4.53	1858	0.21	1887	2.34	10.60	1858	0.30	1850	2.39	5.00	1852	0.10	1859
608, Brackettville	1.22	5.39	1880	0.08	1879	0.70	1.22	1880	0.14	1883	2.00	4.55	1883	0.77	1880
609, Fort Clark	0.57	3.14	1876	0.00	1852	1.26	4.03	1856	0.06	1870	0.94	2.37	1858	0.00	1875
610, Fort Lincoln	0.13	0.26	1852	0.00	1851	4.00	5.05	1851	2.96	1852	3.50	4.90	1852	2.11	1851
611, Uvalde	0.84	2.85	1880	0.08	1879	1.12	1.82	1880	0.71	1882	2.07	4.88	1883	0.59	1881
612, Castroville	1.36	3.20	1880	4.12	1879	1.44	2.63	1880	0.29	1879	1.33	2.68	1880	0.38	1878
613, Columbia†															
614, Cedar Grove	2.96	4.54	1869	1.38	1868	2.46	3.04	1869	1.87	1868	2.25	3.08	1867	1.76	1868
615, Clear Creek											2.30				
616, Galveston	3.66	8.50	1869	0.66	1880	2.61	8.20	1881	0.10	1870	5.59	6.34	1880	0.91	1879
617, Cuero†															
618, Yorktown	2.26	4.05	1869	0.80	1870	0.73	0.90	1870	0.50	1872	2.13	3.60	1870	1.00	1872
619, Helena	0.10										0.05				
620, Eagle Pass	1.12	3.72	1880	0.01	1883	0.97	2.03	1878	0.32	1883	1.80	5.59	1883	0.32	1881
621, Fort Duncan	0.33	0.74	1859	0.00	'55 '57	1.49	4.48	1877	0.12	1850	1.28	6.27	1852	0.00	(1)
622, Fort Inge	0.70	2.16	1853	0.10	1855	1.96	3.58	1853	0.67	1859	1.50	3.00	1854	0.08	1859
623, Victoria†															
624, Goliad	3.03					0.53					1.41				
625, Fort Merrill	0.23	0.35	1855	0.11	1854	2.09	2.19	1855	1.99	1854	0.09	0.13	1855	0.05	1854
626, Fort Ewell	0.76	1.30	1853	0.22	1854	4.73	6.60	1853	2.86	1854	0.71	1.05	1853	0.38	1854
627, Lavaca	3.63	4.30	1870	2.95	1869	2.00	3.01	1869	1.00	1870	2.10	2.40	1869	1.80	1870
628, Indianola	2.32	6.40	1855	0.70	1879	1.93	4.21	1881	0.04	1884	2.60	5.86	1876	0.18	1879
629, Fort McIntosh and Laredo	0.67	3.15	1881	0.00	'71 '72	1.37	7.54	1877	0.00	'70 '71	0.92	3.82	1880	0.00	'71 '76

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
592, Round Top	2.35	3.02	1860	1.24	1859	0.74	1.31	1859	0.18	1860	1.51	2.55	1859	0.47	1860
593, Pin Oak	7.50					6.25					1.00				
594, Bluff Settlement	4.61	6.05	1873	1.75	1871	4.83	6.90	1873	2.00	1874	4.92	8.13	1873	3.32	1871
595, Flatonia†															
596, Beaumont	1.02	1.51	1884	0.53	1882	3.04	5.07	1884	1.30	1883	0.77	1.52	1883	0.35	1882
597, New Ulm	3.84	8.00	1873	0.17	1887	5.72	15.25	1884	0.05	1886	3.48	11.33	1873	0.00	1877
598, Comfort	3.48	8.34	1885	0.34	1887	3.30	6.14	1885	1.46	1886	2.00	4.06	1887	0.05	1885
599, Sisterdale	0.16					1.72					4.37				
600, Lockhart	2.20														
601, Luling	2.30	3.93	1884	0.67	1882	3.49	7.17	1884	0.00	1886	1.08	4.99	1877	0.00	1885
602, New Braunfels	1.93	4.90	1856	1.30	1857	4.67	8.70	1858	2.40	1857	2.62	6.30	1858	0.20	1856
603, Weimar	3.29	6.03	1884	0.20	1882	5.02	11.56	1884	0.00	1886	0.89	1.12	1884	0.18	1885
604, Columbus						2.20					1.40				
605, Oakland	4.43	9.05	1870	1.45	1871	3.20	5.65	1871	1.35	1870	3.16	5.00	1870	1.69	1871
606, Gonzales	8.60					2.00					2.70				
607, San Antonio	2.41	6.07	1866	0.28	1879	3.29	7.92	1885	0.00	1860	3.13	10.46	1872	0.00	1858
608, Brackettville	2.38	4.56	1879	0.00	1882	4.94	13.11	1880	2.21	1877	2.16	5.15	1878	0.01	1881
609, Fort Clark	1.04	3.29	1860	0.00	1870	2.14	6.88	1876	0.37	1860	3.42	7.68	1873	0.11	1854
610, Fort Lincoln	1.86	4.86	1851	0.23	1852	2.89	4.26	1852	1.90	1851	2.07	3.38	1852	0.76	1851
611, Uvalde	1.82	3.08	1879	0.03	1877	2.84	6.44	1881	0.17	1883	0.90	2.01	1880	0.00	1881
612, Castroville	2.31	3.06	1881	1.80	1878	3.08	4.64	1878	1.29	1879	1.31	3.64	1878	(T)	1881
613, Columbia						2.62	5.20	1885	0.00	1886	1.79	3.08	1887	0.57	1885
614, Cedar Grove	3.68	5.96	1868	2.37	1869	4.72	8.18	1867	2.31	1868	4.47	6.55	1867	2.40	1868
615, Clear Creek	0.62					2.30					8.72				
616, Galveston	3.53	14.78	1868	0.10	1871	4.21	10.27	1876	0.03	1886	4.58	11.89	1871	0.03	1881
617, Cuero	1.27	1.60	1884	0.94	1883	3.52	6.89	1884	0.30	1886	1.59	2.94	1887	0.30	1885
618, Yorktown	3.28	3.63	1869	3.05	1872	2.68	4.30	1869	0.10	1870	2.04	3.20	1872	1.00	1871
619, Helena†															
620, Eagle Pass	1.19	2.47	1879	0.68	1880	3.61	8.16	1881	0.63	1879	2.11	5.12	1879	0.00	1881
621, Fort Duncan	0.86	3.65	1877	0.00	(1)	1.73	5.65	1878	0.16	1879	3.80	10 70	1853	0.05	1875
622, Fort Inge	1.52	3.71	1860	0.17	1855	2.36	5.76	1852	0.00	1860	4.51	9.00	1853	0.73	1851
623, Victoria						2.10					2.40				
624, Goliad	0.00					6.55					1.97				
625, Fort Merrill	1.62	3.47	1851	0.23	1855	3.43	7.66	1854	1.21	1855	4.10	8.75	1855	1.13	1852
626, Fort Ewell	1.12	2.25	1853	0.00	1854	5.11	6.88	1854	3.35	1853	7.85	9.65	1853	6.05	1854
627, Lavaca	1.83	3.16	1869	0.50	1870	1.32	2.00	1869	0.64	1870	3.95	7.50	1869	0.40	1870
628, Indianola	1.79	4.19	1885	0.32	1876	3.27	7.94	1884	0.18	1874	2.59	7.56	1884	0.21	1885
629, Fort McIntosh and Laredo	0.87	4.32	1853	0.00	(1)	2.24	7.75	1881	0.25	1873	3.01	6.32	1873	0.00	1881

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
592, Round Top	0.53	0.85	1859	0.20	1860	2.91	4.66	1860	1.17	1859	4.11	6.94	1859	1.28	1860
593, Pin Oak	0.50					0.00					1.25				
594, Bluff Settlement	3.96	4.95	1870	3.25	1872	2.01	5.20	1871	0.60	1874	5.41	17.20	1874	0.88	1872
595, Flatonia†															
596, Beaumont	3.00	5.26	1883	0.73	1882	5.82									
597, New Ulm	4.23	14.38	1873	0.00	1884	3.05	8.38	1878	0.09	1875	5.68	15.09	1874	0.90	1872
598, Comfort	3.33	5.20	1885	0.14	1887	3.51	4.81	1887	2.27	1885	3.30	3.62	1885	3.10	1886
599, Sisterdale	1.19					1.68					7.10				
600, Lockhart	8.25	12.00	1869	4.50	1870	3.30									
601, Luling	2.30	4.93	1882	0.00	1885	1.84	6.30	1886	0.00	1883	3.90	5.50	1883	2.53	1881
602, New Braunfels	2.23	2.66	1859	1.00	1856	2.05	3.00	1857	0.20	1856	3.94	7.35	1859	1.80	1858
603, Weimar	2.32	5.68	1885	0.00	1884	1.55	3.79	1886	0.02	1883	3.65	5.85	1886	2.67	1882
604, Columbus	4.80										16.20				
605, Oakland	1.24	1.87	1870	0.85	1871	2.93	4.44	1870	1.50	1872	0.88	1.10	1872	0.65	1870
606, Gonzales	3.90					1.00					0.30				
607, San Antonio	2.41	6.56	1885	0.00	1871	3.31	11.38	1860	0.17	1850	4.09	17.60	1859	0.05	1852
608, Brackettville	2.20	5.35	1880	(T)	1879	2.61	4.29	1880	0.27	1877	2.70	4.12	1881	1.29	1870
609, Fort Clark	1.22	3.87	1853	0.00	'71' 75	2.23	10.10	1870	0.00	'74 '77	3.93	11.06	1874	0.13	1853
610, Fort Lincoln	1.00	1.10	1852	0.89	1851	0.39					1.54	2.80	1850	0.27	1851
611, Uvalde	2.34	4.85	1878	(T)	1879	3.19	5.71	1880	0.09	1877	2.74	4.46	1880	1.28	1878
612, Castroville	3.10	7.74	1880	0.82	1878	2.70	6.69	1880	0.00	1877	1.92	3.95	1880	0.22	1877
613, Columbia	3.22	8.73	1867	0.30	1884	2.61	3.92	1887	0.65	1884	9.25	15.86	1886	4.71	1884
614, Cedar Grove	4.31	5.33	1867	3.29	1868	7.83					2.50				
615, Clear Creek						2.88					4.60				
616, Galveston	3.31	9.31	1874	0.34	1872	4.96	10.19	1876	1.09	1883	7.75	26.01	1885	0.64	1876
617, Cuero	2.31	5.37	1885	0.00	1884	1.43	3.48	1885	0.26	1883	3.73	4.63	1886	2.29	1884
618, Yorktown	4.26	9.35	1869	0.75	1871	2.72	4.90	1869	0.80	1871	3.86	7.85	1869	0.50	1872
619, Helena†															
620, Eagle Pass	3.34	6.68	1880	0.14	1879	3.54	6.01	1882	0.35	1877	3.54	7.16	1880	0.46	1882
621, Fort Duncan	2.11	6.70	1852	0.07	1879	1.91	4.37	1860	0.13	1877	3.52	9.46	1857	0.10	1850
622, Fort Inge	2.66	6.82	1852	0.04	1860	2.50	5.06	1860	0.12	1852	2.30	5.11	1859	0.73	1851
623, Victoria	0.50					1.10									
624, Goliad	1.41					0.43					1.33				
625, Fort Merrill	5.71	8.76	1852	4.19	1851	4.12	6.29	1855	1.31	1851	4.25	5.86	1853	2.93	1851
626, Fort Ewell	2.90	3.58	1854	2.22	1853	2.43	3.21	1854	1.65	1853	4.91	5.29	1853	4.68	1854
627, Lavaca	8.60	11.30	1869	5.90	1870	3.50	5.10	1869	1.90	1870	8.80				
628, Indianola	2.32	5.76	1874	0.33	1884	3.88	9.02	1882	0.67	1885	7.01	12.89	1874	0.81	1872
629, Fort McIntosh and Laredo	1.90	5.83	1878	0.00	(1)	2.80	12.59	1879	0.00	1851	2.56	9.73	1874	0.00	1850

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
592, Round Top	3.04	4.44	1859	1.65	1860	2.73	5.39	1860	0.07	1859	1.20	1.91	1860	0.49	1859	27.65				
593, Pin Oak	4.50					3.00					2.25					46.75				
594, Bluff Settlement	5.57	15.10	1871	0.88	1874	5.17	10.00	1874	1.25	1872	3.05	5.78	1874	0.50	1871	46.57	57.71	1873	33.35	1872
595, Flatonia†																				
596, Beaumont†																				
597, New Ulm	4.04	12.44	1881	0.79	1874	5.16	14.92	1873	0.48	1887	4.02	16.43	1875	0.46	1880	53.56	91.08	1873	27.32	1877
598, Comfort	1.24	1.75	1886	0.73	1885	0.30	0.44	1885	0.16	1886	0.62	1.04	1885	0.20	1886	24.82	31.82	1885	23.82	1886
599, Sisterdale	1.46					0.10					3.11					23.50				
600, Lockhart†																				
601, Luling	1.75	3.69	1883	0.54	1882															
602, New Braunfels	3.12	4.60	1856	1.40	1858	1.77	4.70	1857	0.00	1859	0.70	1.30	1858	0.40	1859	27.58				
603, Weimar	1.67	3.12	1883	0.78	1886															
604, Columbus†																				
605, Oakland	4.67	7.64	1870	1.70	1872	1.40	2.10	1870	0.70	1871	1.00					28.75				
606, Gonzales	3.40					1.50					4.70					42.00				
607, San Antonio	2.23	7.09	1871	0.30	1849	2.41	8.88	1857	0.00	'59 '79	2.08	11.09	1857	0.02	1871	33.31	41.91	1880	20.13	1887
608, Brackettville	3.30	16.17	1881	0.21	1879	1.09	2.74	1882	0.05	1879	1.08	3.52	1877	0.02	1882	26.38	40.54	1879	16.52	1878
609, Fort Clark	1.41	5.58	1870	0.00	'75' 77	1.45	6.67	1874	0.00	1859	2.45	23.03	1857	0.00	(1)	22.00	34.42	1870	13.56	1871
610, Fort Lincoln	1.36					2.01					0.98					21.73				
611, Uvalde	1.21	3.15	1881	0.44	1880	1.45	2.24	1881	0.01	1879	1.64	6.74	1877	0.09	1879	22.00	31.20	1880	19.22	1879
612, Castroville	1.71	4.85	1881	0.21	1878	1.22	1.76	1880	0.18	1879	1.37	5.05	1877	0.17	1878	22.85	36.44	1880	15.23	1879
613, Columbia	1.02	1.57	1887	0.00	1886															
614, Cedar Grove	2.83	3.63	1868	2.06	1867	4.58	5.97	1868	3.19	1867	5.60	8.84	1868	2.36	1867	48.21				
615, Clear Creek	4.88					4.64					2.60									
616, Galveston	5.06	17.78	1871	0.12	1874	4.32	8.91	1873	0.05	1887	5.02	10.28	1867	2.07	1879	54.60	66.87	1887	26.93	1879
617, Cuero	1.28	2.58	1883	0.00	1886															
618, Yorktown	5.60	10.65	1871	1.75	1869	2.42	5.50	1870	0.25	1869	0.78	1.10	1870	0.50	1871	32.76	46.19	1869	30.95	1870
619, Helena†																				
620, Eagle Pass	1.92	6.54	1881	0.35	1877	0.60	1.57	1881	0.03	1879	1.19	5.40	1877	0.09	1882	24.93	31.89	1880	18.65	1879
621, Fort Duncan	1.15	4.10	1853	0.04	1874	1.17	3.70	1850	0.05	'53 '76	1.39	6.61	1877	0.00	'52 '56	20.74	33.31	1853	14.12	1851
622, Fort Inge	2.77	6.76	1853	0.33	1854	1.67	3.71	1854	0.06	1859	0.87	2.30	1849	0.00	1852	25.32	36.64	1853	18.06	1859
623, Victoria†																				
624, Goliad	4.02					1.42					2.82					24.92				
625, Fort Merrill	1.18	3.12	1853	0.37	1851	1.42	3.20	1854	1.25	1855	1.29	2.13	1854	0.56	1851	29.53	35.22	1854	18.48	1851
626, Fort Ewell	2.36	3.32	1853	1.41	1852	0.49	0.83	1853	0.15	1852	1.16	1.87	1853	0.45	1852	34.53				
627, Lavaca	5.90					0.40					2.00					44.03				
628, Indianola	3.71	11.75	1877	0.62	1874	3.07	6.04	1878	0.13	1879	3.08	6.96	1875	0.69	1880	37.57	45.17	1880	26.78	1879
629, Fort McIntosh and Laredo	1.49	7.82	1856	0.00	(1)	0.84	3.12	1887	0.00	(1)	1.18	4.52	1857	0.00	(1)	19.85	27.49	1878	9.90	1871

† No data. (1) Frequently. (2) Generally. (T) Trace of rain-fall.

TEXAS—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs*
630, Aransas Canal †															
631, Corpus Christi	3.96					1.27	2.37	1846	0.17	1887	1.43	1.61	1887	1.25	1846
632, Ringgold Barracks / Rio Grande City	1.06	3.48	1881	0.00	1873, 1878, 1879	0.98	2.86	1877	0.00	(1)	1.04	4.75	1878	0.00	1858, 1875
633, Hidalgo	1.81	2.79	1881	1.15	1882	0.96	1.15	1879	0.76	1870	1.01	1.42	1880	0.60	1879
634, Fort Brown / Brownsville	1.57	3.87	1880	0.00	1853, 1873	1.56	7.79	1877	0.00	1870, 1871, 1872	1.19	4.15	1878	0.09	1870

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
630, Aransas Canal †															
631, Corpus Christi	2.68	4.32	1851	(T)	1887	2.41	3.44	1846	1.26	1887	3.99	6.65	1846	0.00	1885
632, Ringgold Barracks / Rio Grande City	1.05	3.79	1853	0.00	(1)	2.78	10.28	1885	0.00	1872	2.79	10.98	1854	0.00	1881, 1885
633, Hidalgo	0.10	0.19	1880	0.00	1879	1.02	2.05	1880	0.00	1879	0.56	1.12	1879	0.00	1880
634, Fort Brown / Brownsville	0.56	2.20	1853	0.00	(1)	3.74	7.17	1885	0.00	1857, 1870	2.88	13.80	1887	0.00	1860

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
630, Aransas Canal †															
631, Corpus Christi	1.77	3.97	1851	(T)	1885	2.14	5.48	1846	(T)	1885	8.23	10.49	1846	4.96	1851
632, Ringgold Barracks / Rio Grande City	1.51	5.98	1878	0.00	1871, 1874, 1881	2.94	11.75	1879	0.00	1884	3.70	9.35	1874	0.00	1877
633, Hidalgo	1.04	1.88	1880	0.20	1879	6.88	7.52	1879	6.23	1880	4.01	5.49	1879	2.38	1880
634, Fort Brown / Brownsville	2.05	7.58	1855	0.22	1885	3.38	16.58	1880	0.01	1850	7.14	30.57	1883	0.25	1850

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
630, Aransas Canal						1.79														
631, Corpus Christi	1.90	2.99	1887	(T)	1885	2.04	3.56	1845	0.66	1887	3.65	5.07	1887	1.19	1851	35.47				
632, Ringgold Barracks. / Rio Grande City	1.97	6.98	1881	(T)	1886	0.98	3.10	1872	0.00	1879	1.21	5.60	1860	0.00	1855, 1871	22.01	32.19	1887	11.94	1875
633, Hidalgo	6.06	10.54	1881	2.59	1880	1.18	2.01	1881	0.00	1879	0.62	1.70	1881	0.04	1879	25.25				
634, Fort Brown / Brownsville	4.60	16.27	1887	0.22	1876	2.03	7.47	1854	0.10	1869	1.62	6.32	1877	0.05	1871	31.03	60.80	1855	8.88	1870

† No data. (1) Frequently. (2) Generally (T) Trace of rain-fall.

WYOMING TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	County.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M*			
635	Fort Sheridan	National Park Reservation.	44 58	109 51	.....	0 2	Dec., 1886	Jan., 1887	U. S. post hospital.
636	Fort Washakie	Fremont	43 01	108 56	.....	9 0	Oct., 1872	Jan., 1887	Signal Service and U. S. post hospital. Record much broken. Dec., 1872, to May, 1873, inclusive; May, 1878, to July, 1880, inclusive; Sept., 1880; July, 1881; June, July, Oct., Nov., Dec., 1883; Jan., 1884, to Dec., 1885, inclusive.
637	Fort Stambaugh	....do	42 30	109 00	8,012	3 10	July, 1874	Apr., 1878	U. S. post hospital.
638	Fort McKinney	Johnson	44 26	106 44	.....	1 1	Jan., 1886	Jan., 1887	Do.
		Crook.†							
639	Fort Bridger	Uinta	41 28	110 30	6,643	22 3	Dec., 1859	Dec., 1887	Signal Service and U. S. post hospital. Record much broken. Aug., 1860, to Dec., 1862, inclusive; Oct., Nov., 1864; Dec., 1865; Jan., June, July, Aug., 1866; Dec., 1866, to Mar., 1867, inclusive; June, 1867; Dec., 1867, to Mar., 1868, inclusive; Feb., 1869, and Dec., 1869; May, 1872; Oct., 1877, to July, 1880, inclusive.
640	Fort Fred Steele	Carbon	41 43	106 55	6,850	12 6	June, 1869	July, 1886	U. S. post hospital. Record much broken. Nov., Dec., 1869; May, July, Nov., 1870; June, 1871; Nov., 1875; July to Dec., 1876, inclusive; Mar., May, June, 1877; Aug., Sept., 1880; Nov., 1880, to Feb., 1882 inclusive; May, 1882, to Feb., 1884, inclusive.
641	Edson	....do	41 42	106 41	.....	2 8	Sept., 1877	Apr., 1880	Signal Service.
642	Fort Fetterman	Albany	42 50	105 28	4,973	12 3	Nov., 1868	Jan., 1882	U. S. post hospital. Record much broken. Dec., 1868, to Feb., 1869; Dec., 1869; Feb., Mar., 1870; Mar., 1872; July, Aug., 1874; Nov., 1875; June, 1877; Feb., 1881.
643	Fort Laramie	Laramie	42 14	104 29	4,519	22 10	Sept., 1849	Dec., 1887	Signal Service and U. S. post hospital. Record much broken. Dec., 1850, to Mar., 1851; Mar., Apr., May, 1861; Oct., Nov., 1863; Oct., Nov., 1864; Mar., Apr., 1865; June, 1865, to Dec., 1868, inclusive; Mar., Apr., May, 1871; Sept., 1871, to Mar., 1872, inclusive; Aug., Nov., 1872; July, 1873; Feb. to July, 1875, inclusive; Oct., 1876; Feb., 1877; Apr., 1877, to Nov., 1885, inclusive; Apr., June, July, Aug., Sept., 1886.
644	Fort Sanders	....do	41 16	105 32	7,180	9 5	Feb., 1869	Aug., 1878	U. S. post hospital. Apr., June, 1877.
645	Cheyenne	....do	41 08	104 48	6,105	17 8	Jan., 1870	Dec., 1887	Signal Service and U. S. post hospital.
646	Hat Creek	Laramie	42 05	104 20	.....	2 6	Oct., 1877	Sept., 1880	Signal Service. Record much broken. Sept., Oct., Nov., 1879; July, 1880.
		Sweetwater.†							

† No data.

WYOMING TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
635, Fort Sheridan	7.70														
636, Fort Washakie	0.61	2.34	1874	0.00	1878	0.36	1.04	1881	0.10	1886	1.02	2.05	1886	0.01	1882
637, Fort Stambaugh	1.10	1.53	1876	0.54	1878	0.43	0.77	1876	0.00	1887	1.65	4.79	1876	0.61	1877
638, Fort McKinney	1.05	1.10	1887	1.00	1886	0.40					0.30				
639, Fort Bridger	0.70	2.89	1881	0.00	(1)	0.43	1.45	1873	0.00	{1860 {1863	0.79	4.50	1869	0.00	1868
640, Fort Fred Steele	0.84	3.50	1870	0.07	1874	0.65	2.50	1870	0.05	1877	0.92	2.60	1875	0.00	1882
641, Edson	0.51	0.76	1880	0.07	1878	0.40	1.06	1878	(T)	1879	0.69	1.07	1878	0.07	1879
642, Fort Fetterman	0.39	0.54	{1873 {1877	0.13	{1878 {1880	0.73	3.40	1873	0.12	1877	1.34	3.42	1877	0.11	1875
643, Fort Laramie	0.72	4.24	1886	0.00	(1)	0.87	4.28	1886	0.00	{1859 {1865	0.70	1.78	1853	0.00	(1)
644, Fort Sanders	0.88	3.53	1875	0.06	1870	0.61	1.26	1878	0.00	1877	0.64	1.11	1876	0.13	1871
645, Cheyenne	0.28	0.88	1883	0.02	1872	0.29	0.93	1870	0.02	1873	0.63	1.59	1884	0.06	1882
646, Hat Creek	0.02	0.04	1878	0.03	1879	0.04	0.05	1880	0.02	1878	0.07	0.18	1878	0.00	1879

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
635, Fort Sheridan†															
636, Fort Washakie	1.86	3.73	1883	0.52	1882	2.26	5.01	1887	0.00	1875	0.61	2.46	1886	0.00	{1875 {1876
637, Fort Stambaugh	1.45	1.85	1878	0.98	1876	2.30	3.65	1877	0.59	1875	0.17	0.32	1875	0.05	1877
638, Fort McKinney	1.05					0.05					1.55				
639, Fort Bridger	0.74	1.58	1882	0.00	1863	1.11	5.02	1863	0.06	1865	0.55	3.25	1872	0.00	{1865 {1871
640, Fort Fred Steele	1.89	6.00	1870	0.25	1877	1.12	2.92	1884	0.00	1886	0.77	3.25	1870	0.00	1876
641, Edson	2.20	2.73	1879	1.83	1878	1.38	2.63	1878	0.12	1879	0.84	0.93	1879	0.75	1879
642, Fort Fetterman	1.58	3.72	1878	0.00	1876	2.51	6.04	1873	0.44	1869	1.26	2.58	1874	0.40	1873
643, Fort Laramie	1.32	4.75	1873	0.06	{1863 {1876	2.55	12.19	1853	0.00	1865	1.34	4.95	1853	0.00	{1861 {1873
644, Fort Sanders	1.13	3.63	1870	0.10	1878	1.47	2.80	1878	0.15	1875	1.53	4.90	1878	0.05	{1871 {1875
645, Cheyenne	1.38	3.76	1885	0.17	1880	2.00	4.83	1884	0.32	1886	1.46	3.67	1883	0.07	1879
646, Hat Creek	3.48	6.93	1878	0.04	1878	2.92	4.83	1878	1.00	1879	1.00	3.00	1880	0.00	{1878 {1879

Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
635, Fort Sheridan†															
636, Fort Washakie	0.69	2.50	1875	0.05	1877	0.37	1.15	1875	0.00	(1)	0.51	1.24	1877	0.00	1876
637, Fort Stambaugh	0.58	1.15	1875	0.16	1877	0.38	0.67	1876	0.08	1874	0.66	1.00	1874	0.51	1876
638, Fort McKinney	1.70					0.40					0.70				
639, Fort Bridger	0.57	1.80	1860	0.12	1886	0.90	2.57	1869	0.06	1871	0.79	5.05	1865	0.00	1871
640, Fort Fred Steele	0.68	2.01	1869	0.08	1877	0.94	3.35	1869	0.05	1877	0.73	1.88	1878	0.00	1879
641, Edson	0.83	1.56	1878	0.10	1879	0.40	0.62	1878	0.17	1879	1.56	2.86	1878	(T)	1879
642, Fort Fetterman	1.75	4.70	1881	0.77	1880	0.90	2.46	1870	0.12	1879	1.14	4.20	1881	0.00	(1)
643, Fort Laramie	1.49	4.15	1856	0.02	1876	1.21	2.93	1855	0.00	1860	0.96	3.39	1855	0.00	{1861 {1873
644, Fort Sanders	1.82	3.07	1874	0.27	1869	1.66	4.90	1878	0.00	1871	0.99	1.91	1877	0.40	1871
645, Cheyenne	1.64	3.90	1872	0.30	1870	1.46	2.50	1878	0.07	1870	0.98	2.02	1877	0.00	{1876 {1879
646, Hat Creek	1.20	1.50	1878	0.90	1879	1.70	3.65	1880	0.00	1879	1.12	2.23	1878	0.00	1880

Name and number of station.	October.					November.			December.				Year.			
	Average.	Maximum.		Minimum.		Average.	Maximum.	Minimum.	Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
635, Fort Sheridan†																		
636, Fort Washakie	0.01	2.18	1874	0.00	{1875 {1876	0.61	2.29	1886	0.07 1882	0.23	0.60	1874	0.00 1875	10.14	14.74	1886	3.34	1876
637, Fort Stambaugh	0.78	1.49	1874	0.00	1875	0.81	1.13	1875	0.54 1876	0.49	1.02	1877	0.21 1874	10.80	12.34	1876	9.98	1875
638, Fort McKinney	1.80					0.45				0.15				9.60				
639, Fort Bridger	0 54	1.30	1883	0.01	1867	0.68	2.80	1871	0.04 {1865 {1884	0.70	4.13	1859	0.12 1860	8.50	13.26	1869	5.05	1860
640, Fort Fred Steele	1.23	2.75	1869	0.14	1885	0.56	2.82	1871	0.10 1873	0.70	1.24	1871	0.22 1885	11.03	23.45	1870	6.50	1873
641, Edson	1.35	1.45	1877	1.16	1878	0.22	0.45	1879	0.08 1877	0.93	1.49	1879	0.14 1877	11.31	14.15	1878	8.00	1879
642, Fort Fetterman	1.18	2.88	1871	0.00	1876	0.85	2.50	1871	0.05 1874	1.37	6.02	1872	0.05 1874	15.06	30.81	1881	9.21	1876
643, Fort Laramie	0.90	2.72	1849	0.00	1860	0.48	3.23	1866	0.00 (1)	0.84	4.85	1855	0.00 1874	13.38	31.42	1852	2.38	1860
644, Fort Sanders	0.88	1.70	1877	0.04	1870	0.78	2.27	1876	0.00 1870	0.53	1.05	1876	0.03 1869	12.92	17.77	1872	8.16	1871
645, Cheyenne	0.67	1.99	1887	0.00	1876	0.31	1.11	1885	0.00 1878	0.22	0.80	1883	0.01 1881	11.32	19.24	1883	5.03	1876
646, Hat Creek	2.00	2.78	1877	1.22	1878	1.46	2.23	1877	0.68 1878	0.25	0.31	1878	0.10 1877	17.26				

† No data. (1) Frequently. (T) Trace of rain-fall.

INDIAN TERRITORY.

Geographical arrangement of stations, giving their latitude, longitude, elevation, name of observer and length of record.

No.	Name of station.	Reservation.	Latitude.	Longitude.	Elevation.	Record.			Remarks as to observers and missing records.
						Length.	From—	To (inclusive)—	
			° ′	° ′	*Feet.*	*Yrs.* *M.*			
647	Fort Supply	Unknown Nation	36 30	99 27	1,901	8 6	July, 1873	Dec., 1887	Signal Service and U. S. post hospital. Record much broken. Sept., 1874; June to Dec., inclusive, 1876; years 1877, 1878, 1879, 1880; Sept. to Dec. inclusive; year 1884.
648	Fort Gibson	Kansas.† Osage.† Cherokee	35 50	95 21	510	30 2	July, 1836	Dec., 1886	Post hospital and Signal Service. Record much broken. July, Aug., and Sept., 1839; Mar., 1856; Feb., Apr., May, from July to Dec., inclusive, 1857; years from 1857 to 1872, inclusive; Jan., Feb., and Mar., 1873; from May to Dec., inclusive, 1882; years from 1882 to 1885, inclusive; Jan. to Apr., inclusive, 1886.
		Peorias.† Quapaws.† Ottawas.† Shawnees.† Nez Percés.† Wyandotte.† Poncas.† Senecas.† Pawnees.† Otoes and Missourias.†							
649	Cantonment	Cheyennes and Arapahoes.	36 06	98 33	.....	0 10	Feb., 1884	Nov., 1884	Signal Service.
650	Fort Reno	....do ..... Oklahoma.† Creek.† Sac and Fox.† Iowas.† Wichitas.† Kickapoos.† Pottawatomies.†	35 34	98 23	.....	4 11	Jan., 1883	Dec., 1887	Signal Service. Nov., 1884.
651	Fort Towson	Choctaw ..... Seminoles.†	34 00	95 33	300	13 9	June, 1836	Apr., 1854	U. S. post hospital. Record much broken. July, 1841; from Apr. to Dec., inclusive, 1846; years 1847 and 1848; from Jan. to May, inclusive, 1849; July and Dec., 1851; from Jan. to Sept., inclusive, 1852.
652	Fort Arbuckle	Chickasaw	34 27	97 09	1,000	10 10	Oct., 1850	Aug., 1870	U. S. post hospital. Record much broken. From Feb. to Nov., inclusive, 1858; years from 1860 to 1866, inclusive; from Jan. to May, inclusive, 1867; Oct. to Dec., inclusive, 1867; from May to Nov., inclusive, 1868.
653	Fort Washita	....do	34 14	96 38	.....	15 1	Aug., 1843	Dec., 1859	U. S. post hospital. Record much broken. From Feb. to Nov., inclusive, 1858; Jan., from June to Oct., inclusive, 1859.
654	Fort Sill	Kiowas. Comanches and Apaches.	34 40	98 23	1,190	16 11	Apr., 1870	Dec., 1887	Signal Service and U. S. post hospital. Record much broken. Aug., from Oct. to Dec., inclusive, 1883; from Jan. to June, inclusive, 1884.

† No data.

INDIAN TERRITORY—Continued.

Rain-fall in inches, showing the greatest, least, and average values for each month and for the year.

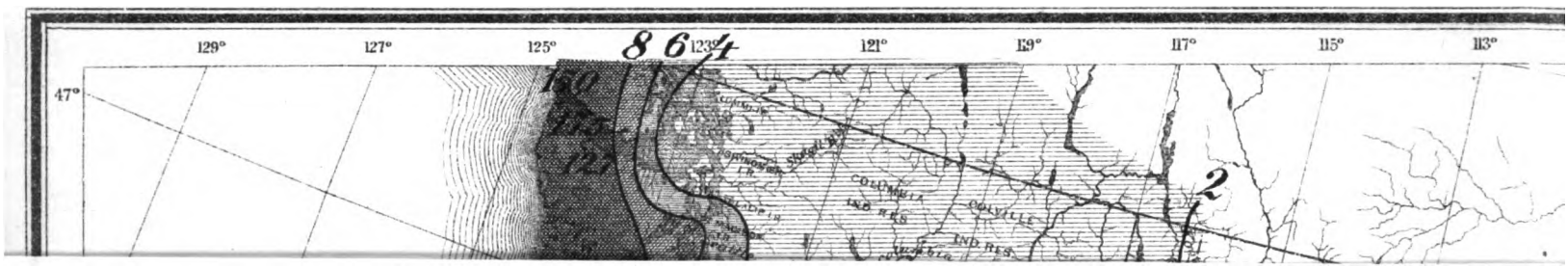
Name and number of station.	January.					February.					March.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
647, Fort Supply	0.65	2.15	1876	0.40	1887	0.95	3.06	1874	0.02	1887	1.52	7.62	1876	0.01	1887
648, Fort Gibson	2.08	7.40	1843	0.10	1847	2.28	10.42	1851	0.20	{1838} {1848}	2.52	7.83	1854	0.30	1842
649, Cantonment	.....	.....	.....	.....	.....	0.72	.....	.....	.....	.....	0.96	.....	.....	.....	.....
650, Fort Reno	0.32	1.08	1886	0.00	1883	0.99	1.80	1883	0.37	1885	1.40	2.20	1885	0.59	1887
651, Fort Towson	3.13	7.10	1838	1.00	1837	2.92	11.09	1851	0.20	1841	4.67	7.40	1842	1.60	1838
652, Fort Arbuckle	0.71	2.16	1869	0.01	1859	2.35	5.40	1851	0.30	1868	1.20	4.53	1868	0.20	1851
653, Fort Washita	1.69	4.40	1846	0 01	1854	2.78	5.70	1851	0.34	1855	2.61	5.53	1854	0.13	1855
654, Fort Sill	0.83	2.73	1879	0.00	{1871} {1887}	1.43	3.45	1881	0.18	1872	1.53	4.52	1871	0.03	1872

Name and number of station.	April.					May.					June.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
647, Fort Supply	3.35	8.60	1885	0.99	1876	4.21	7.84	1883	0.10	1886	3.55	5.44	1885	0.40	1874
648, Fort Gibson	4.25	12.55	1840	0.50	1851	4.49	10.13	1840	0.37	1850	4.13	9.17	1849	0.00	1857
649, Cantonment	2.56	.....	.....	.....	.....	6.95	.....	.....	.....	.....	2.96	.....	.....	.....	.....
650, Fort Reno	2.48	4.03	1884	1.00	1883	4.71	9.84	1885	0.35	1886	6 03	9.41	1885	4.64	1887
651, Fort Towson	5.28	13.60	1840	1.60	1839	5.84	9.26	1843	2.04	1850	5.80	17.50	1839	0.70	1838
652, Fort Arbuckle	3.16	6.89	1870	1.04	1853	4.55	7.30	1852	0.46	1870	4.04	5.31	1867	1.53	1856
653, Fort Washita	3.40	7.91	1848	0.44	1857	5.31	14.61	1849	1.97	1848	4.33	10.23	1846	0.31	1846
654, Fort Sill	2.35	6.93	1879	0.77	1871	4.71	9.74	1880	0.00	1870	4.33	7.32	1876	0.21	1881

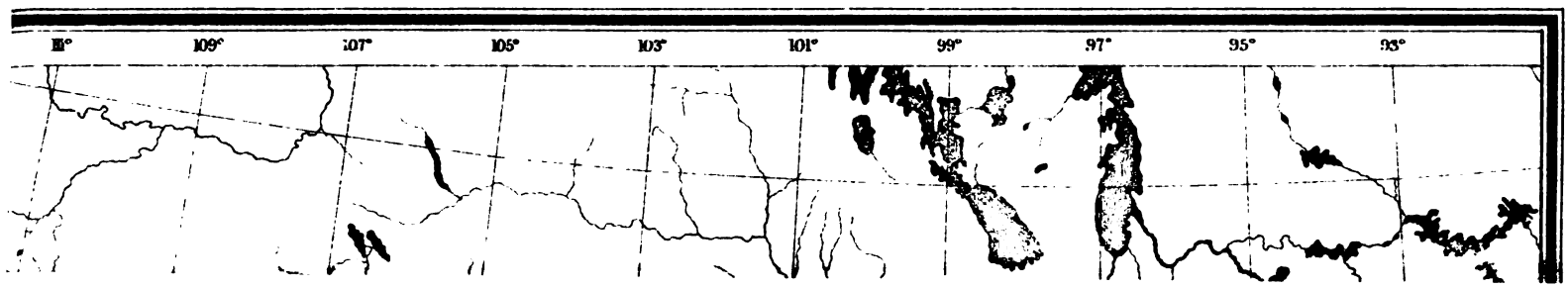
Name and number of station.	July.					August.					September.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
647, Fort Supply	4.53	9.34	1881	1.20	1874	1.64	5.32	1883	0.35	1874	2.54	4.23	1873	0.86	1886
648 Fort Gibson	2.97	10.93	1875	0.21	1854	2.69	8.18	1843	0.00	1848	2.56	8.04	1836	0.35	1848
649, Cantonment	1.44	.....	.....	.....	.....	4.24	.....	.....	.....	.....	2.80	.....	.....	.....	.....
650, Fort Reno	2.28	3.74	1883	0.88	1886	2.61	3.74	1885	0.40	1886	3.35	4.75	1884	1.27	1886
651, Fort Towson	4.62	10.76	1849	0.00	1845	4.03	7.96	1844	0.49	1853	3.41	6.50	1841	0.01	1851
652, Fort Arbuckle	4.30	8.64	1869	0.00	1854	3.98	10.77	1856	1.16	1851	3.35	8.92	1859	0.57	1855
653, Fort Washita	3.24	13.40	1849	0.10	1851	2.86	5.85	1847	0.35	1848	3.55	9.60	1846	0.60	1851
654, Fort Sill	3.06	8.21	1875	0.19	1871	2.96	7.54	1875	0.00	1874	3.09	7.24	1870	0.30	1871

Name and number of station.	October.					November.					December.					Year.				
	Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Average.	Maximum.		Minimum.		Mean.	Maximum.		Minimum.	
	Ins.	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*	*Ins.*	*Ins.*	*Yrs.*	*Ins.*	*Yrs.*
647, Fort Supply	1.06	2.55	1882	0.00	1873	1.01	3.30	1874	0.12	1886	0.95	3.19	1885	0.01	1886	25.96	37.66	1885	16.20	1886
648, Fort Gibson	3.55	9.35	1851	0.52	1837	2.92	8.15	1841	0.35	1878	2.16	7.70	1851	0.03	1845	36.60	55.82	1840	18.84	1838
649, Cantonment	1.94	.....	.....	.....	.....	1.98	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
650, Fort Reno	3.73	5.71	1887	1.31	1885	0.45	1.45	1884	0.08	1886	0.15	3.57	1884	0.04	1886	28.50	39.49	1884	16.51	1886
651, Fort Towson	4.59	9.90	1841	1.13	1851	4.10	9.37	1843	1.19	1845	2.84	8.30	1841	0.77	1852	51.23	73.36	1842	34.40	1838
652, Fort Arbuckle	2.62	7.16	1852	0.55	1854	2.87	5.40	1850	1.05	1859	1.98	5.76	1855	0.12	1852	35.71	47.49	1857	22.24	1851
653, Fort Washita	2.94	5.95	1852	0.41	1847	3.60	7.56	1843	0.80	1853	1.84	3.75	1850	0.17	1844	38.15	64.49	1849	21.81	1855
654, Fort Sill	2.67	7.10	1886	0.00	1875	1.85	4.65	1877	0.14	1870	1.92	6.97	1877	0.00	1871	30.23	48.45	1877	19.57	1886

MEAN MONTHLY R



AINFALL, JANUARY.



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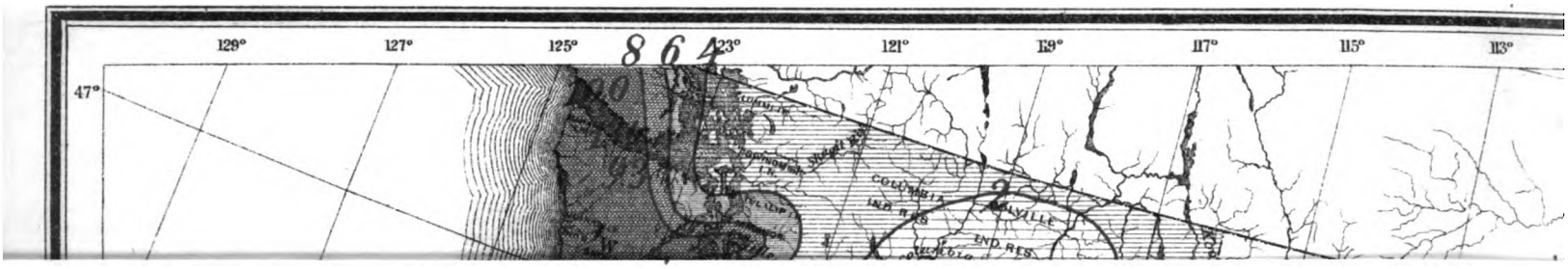

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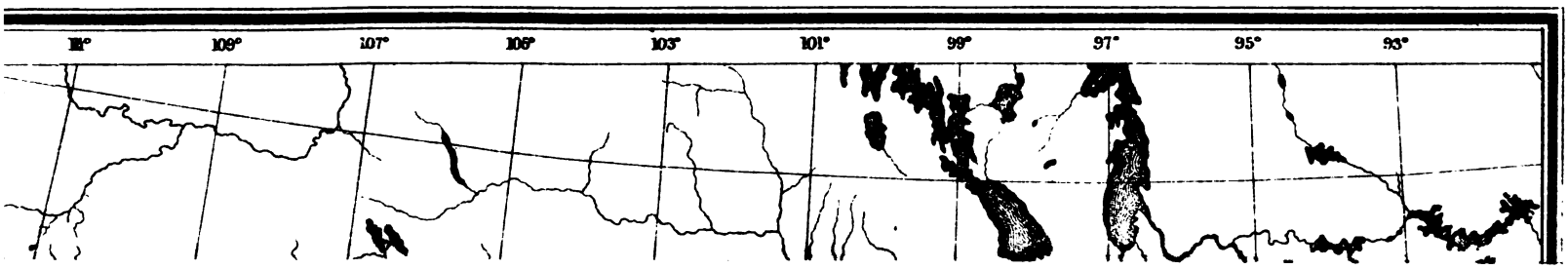

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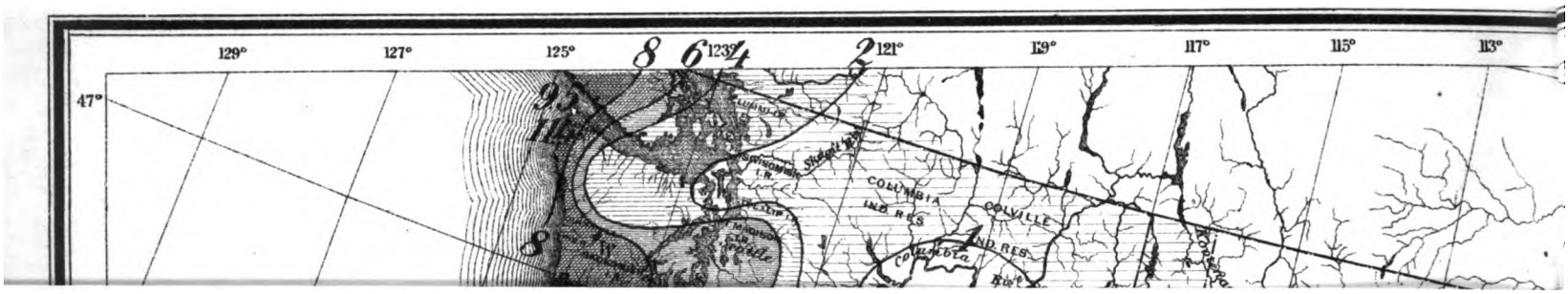

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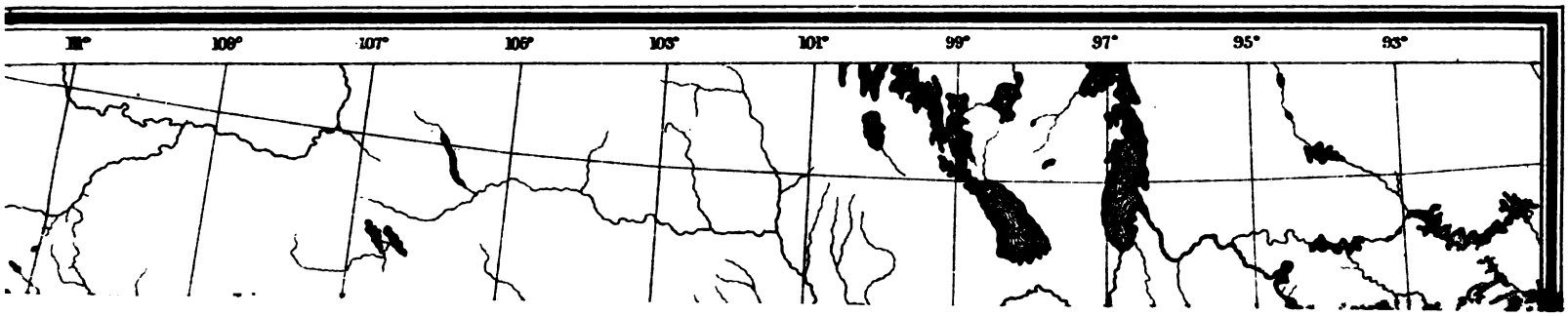

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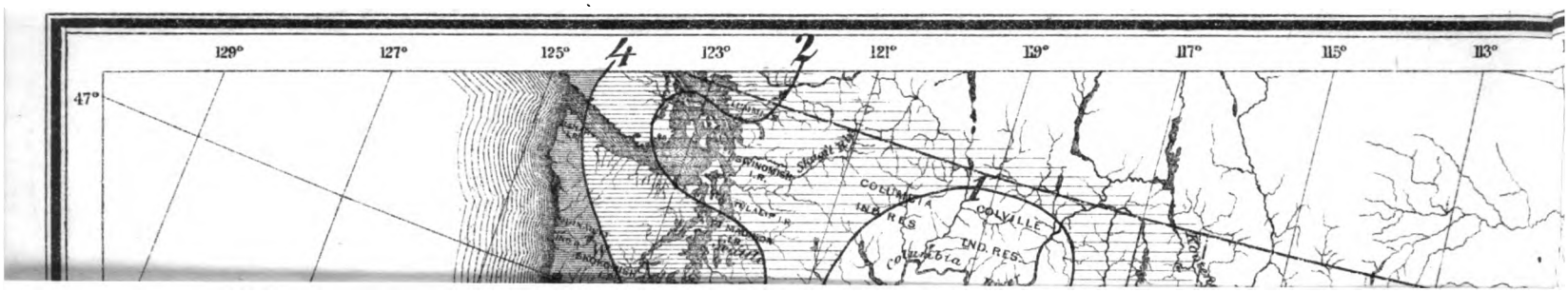

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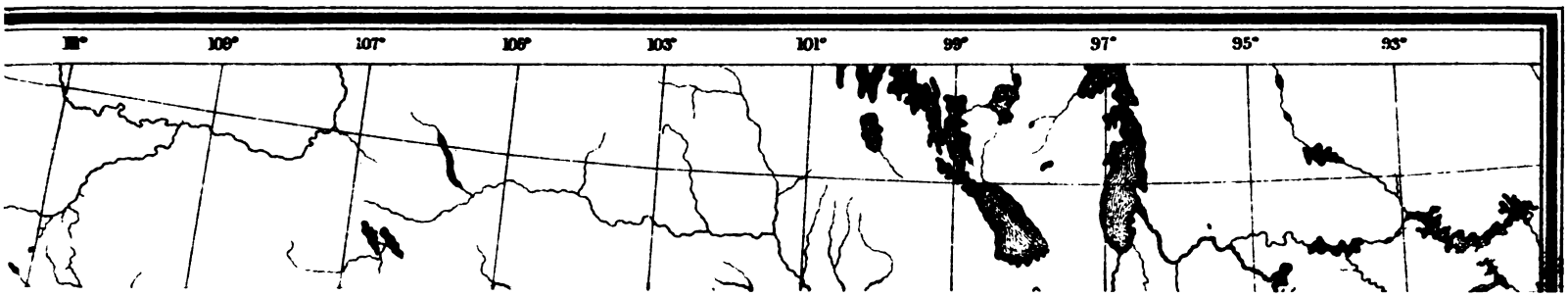

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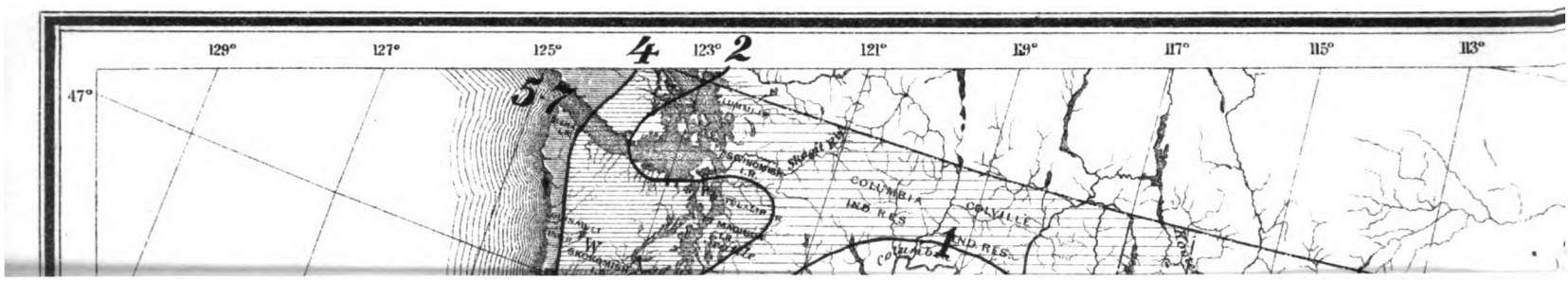

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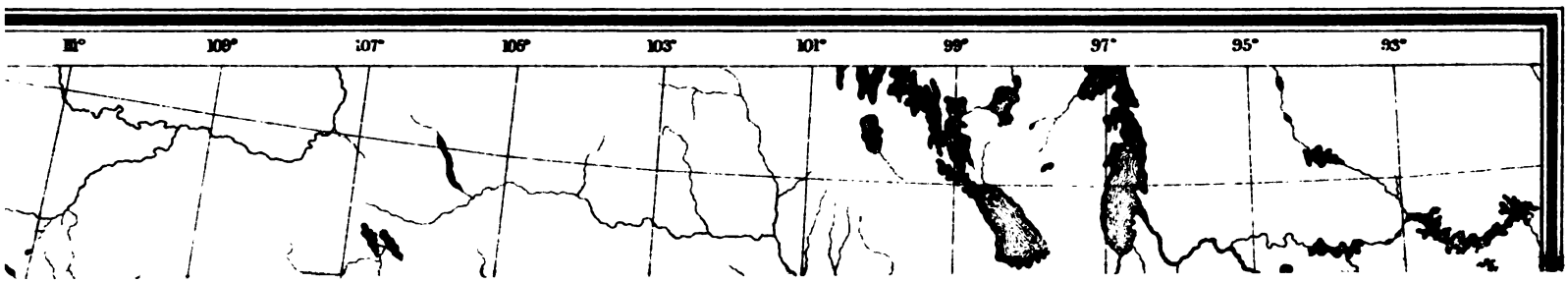

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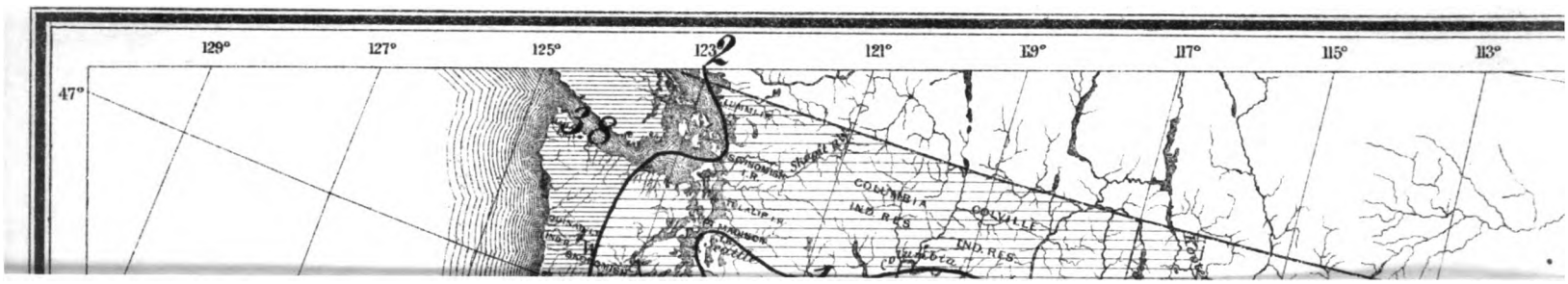

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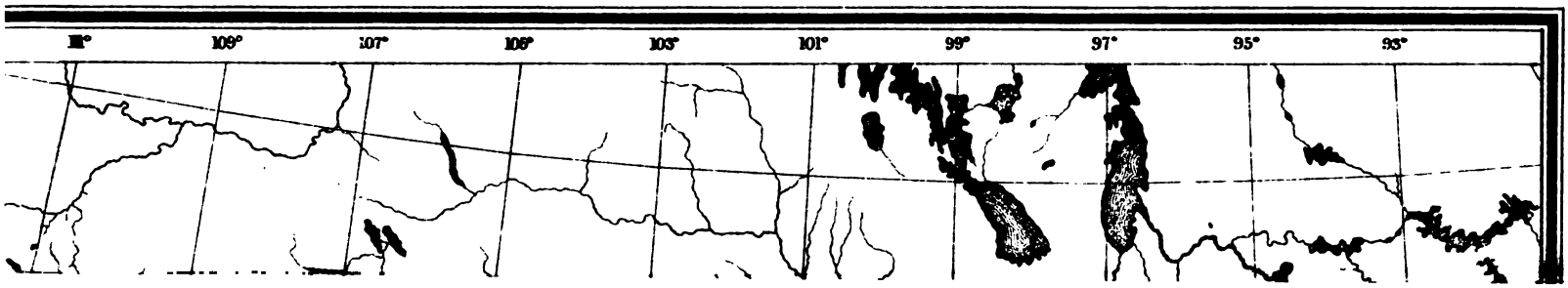

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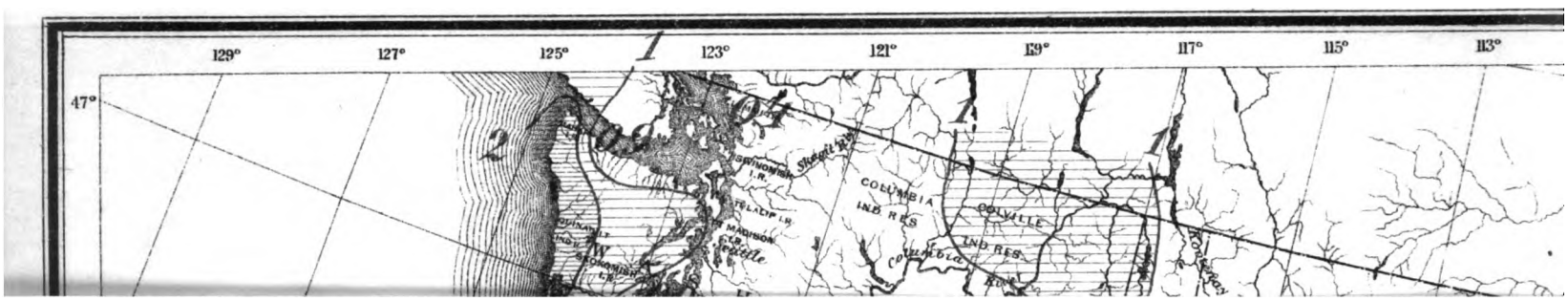

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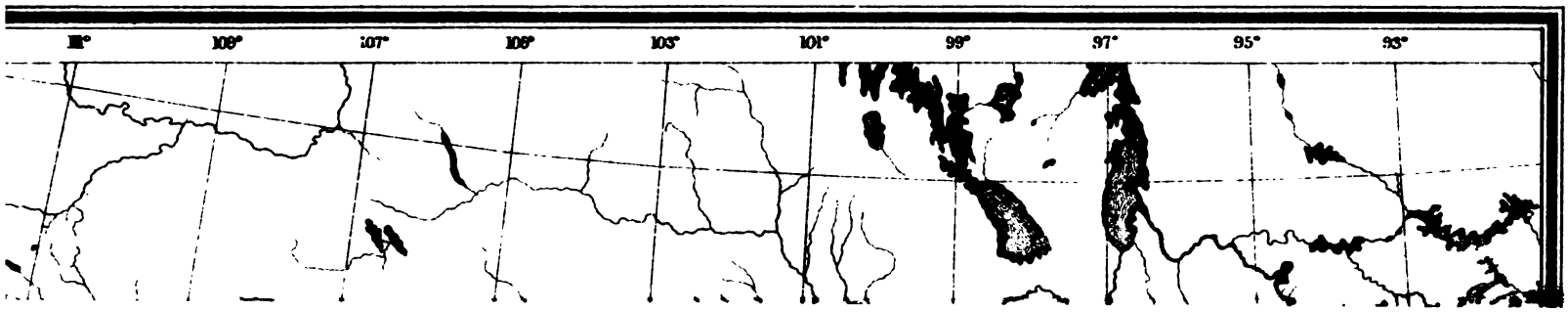

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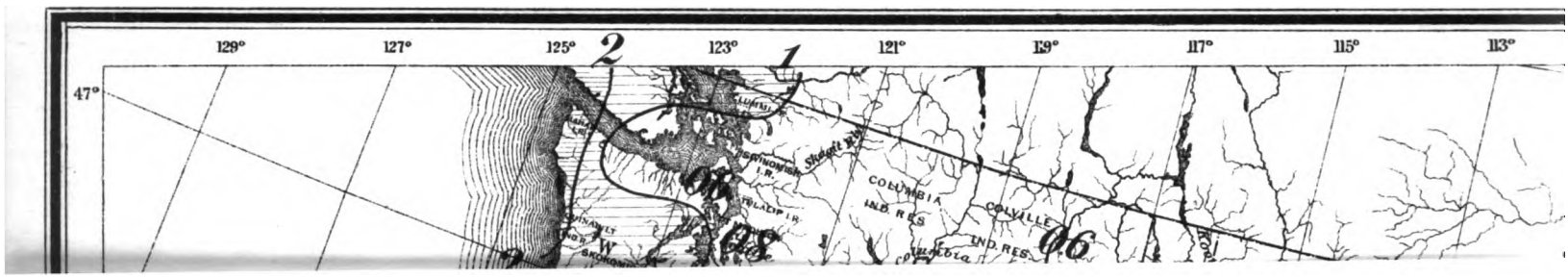

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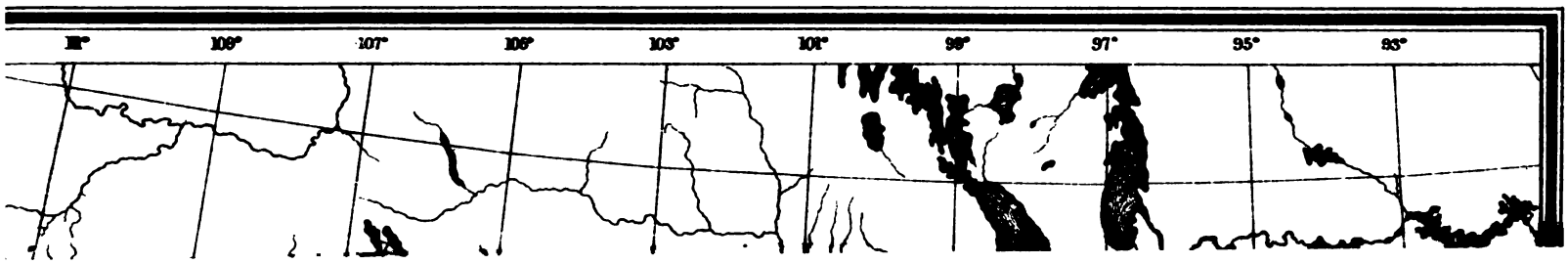

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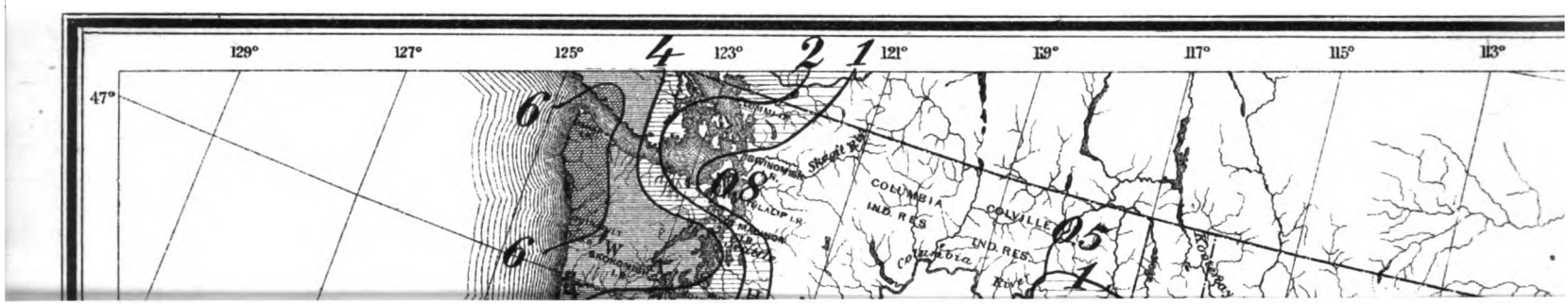
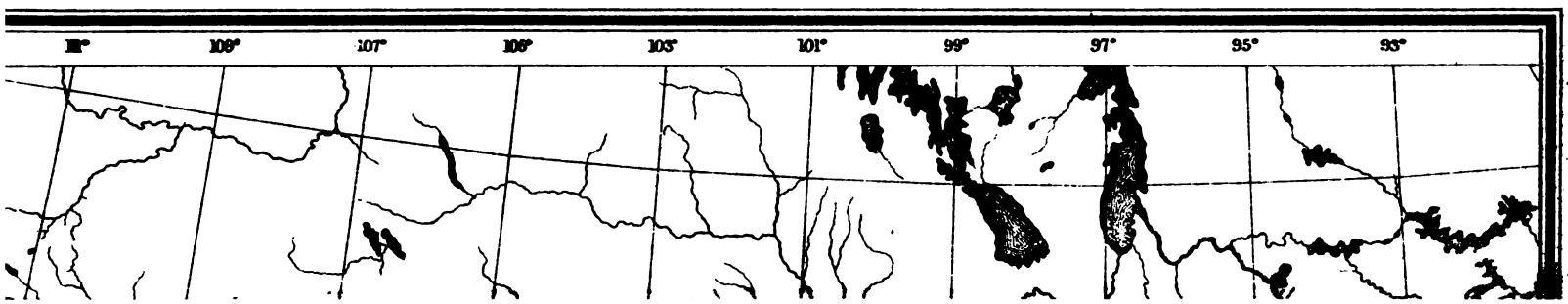


NFALL, SEPTEMBER.



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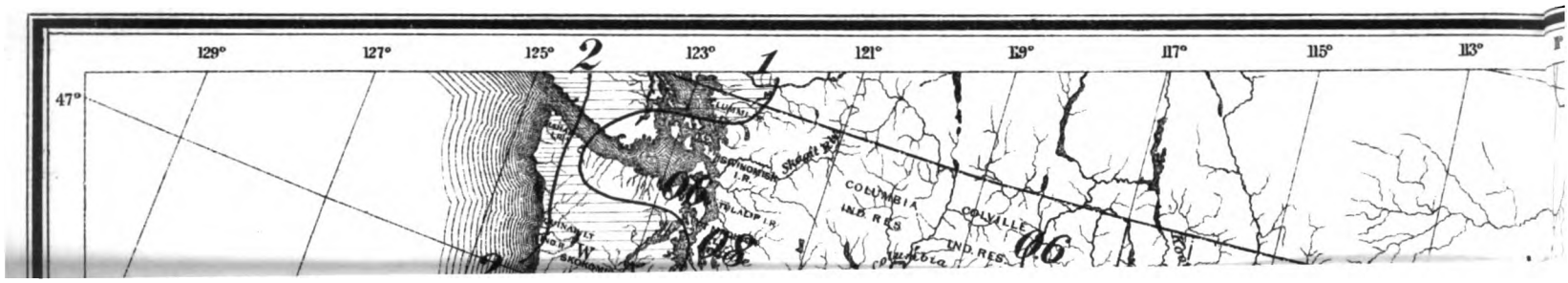

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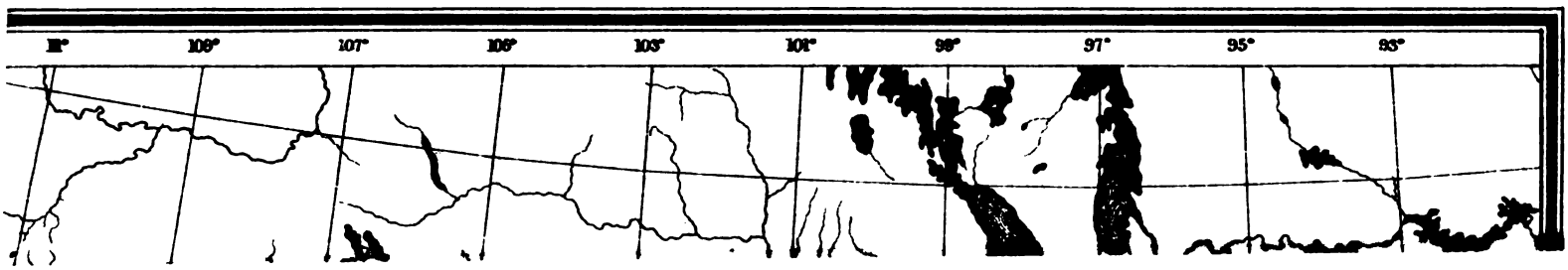

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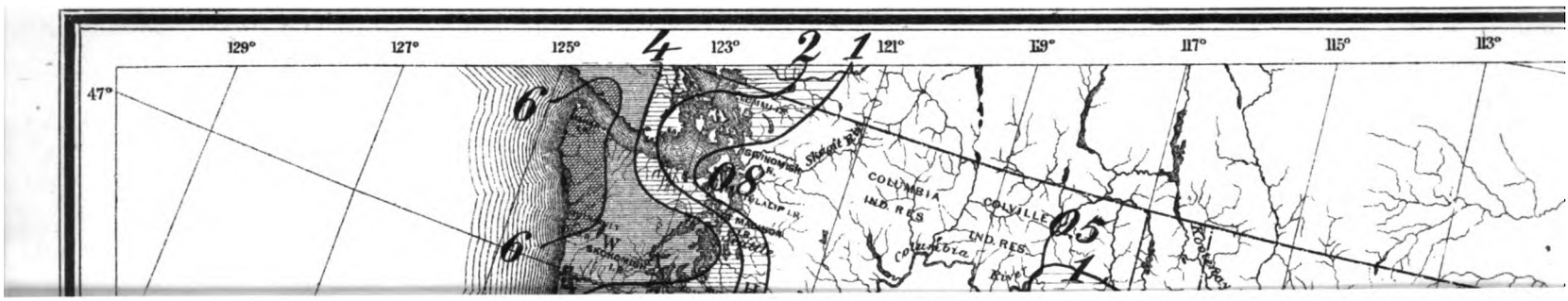

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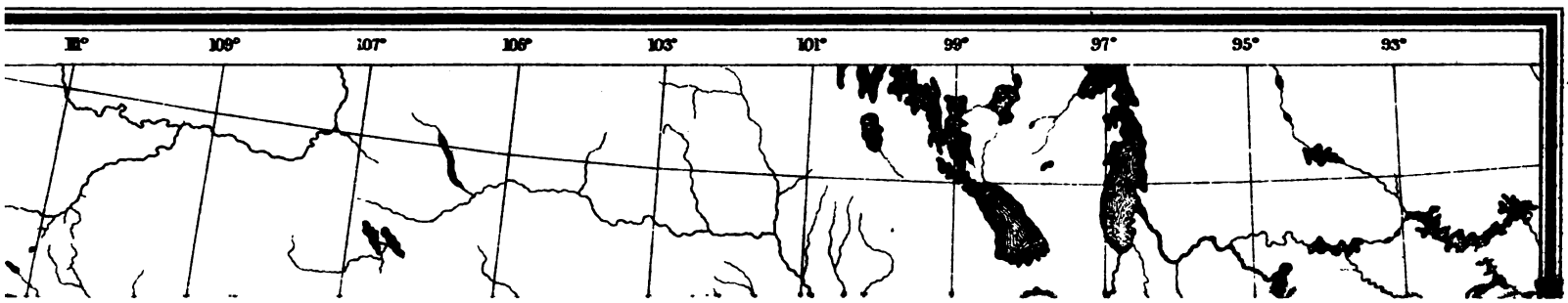

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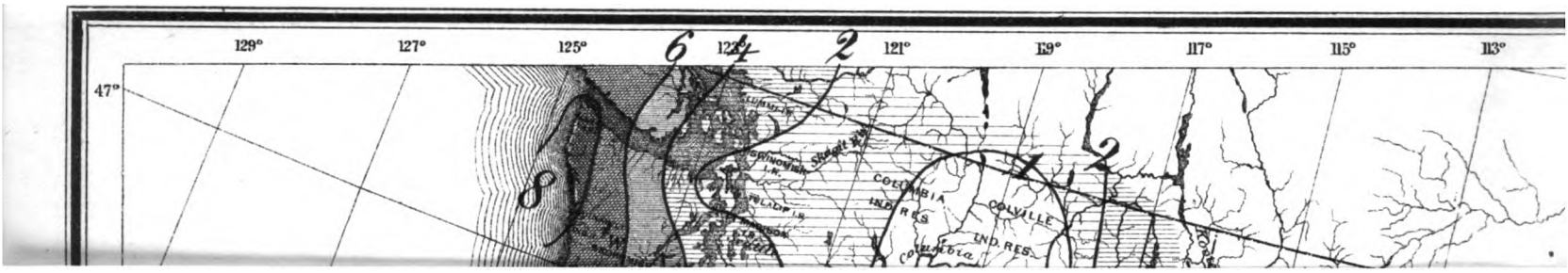

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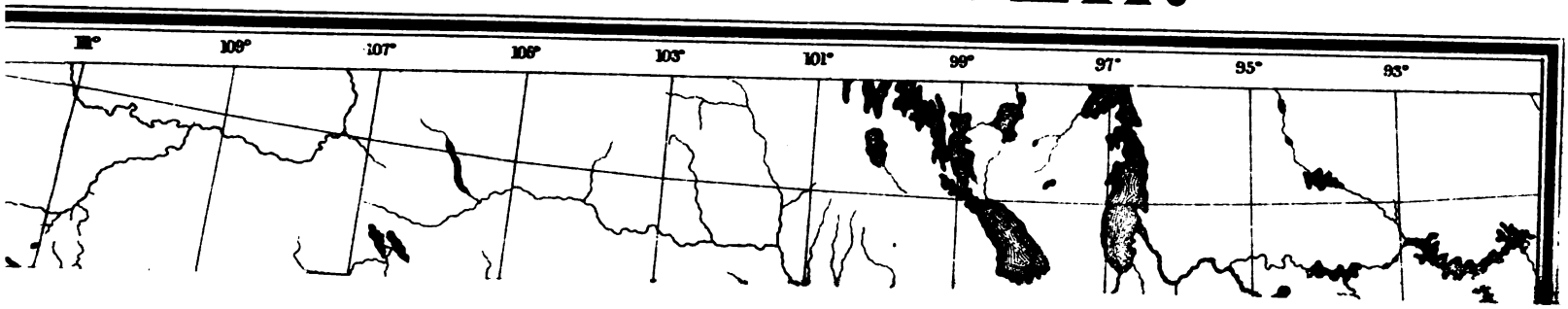

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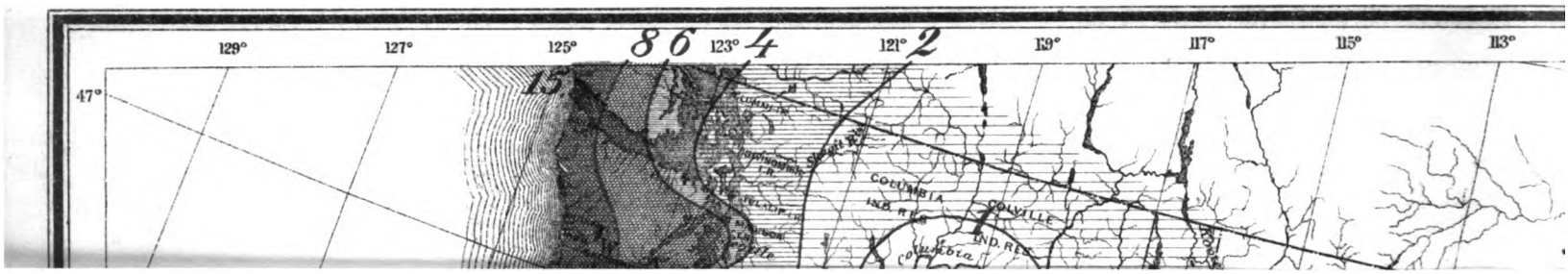

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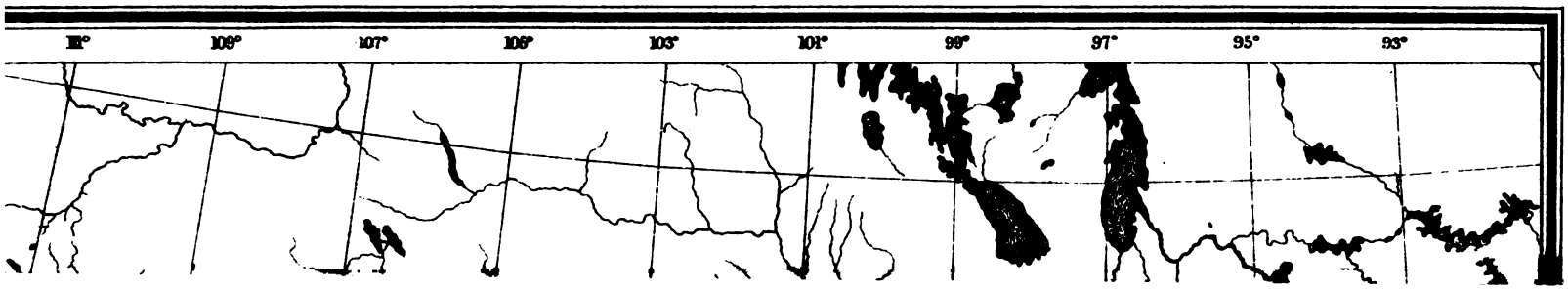

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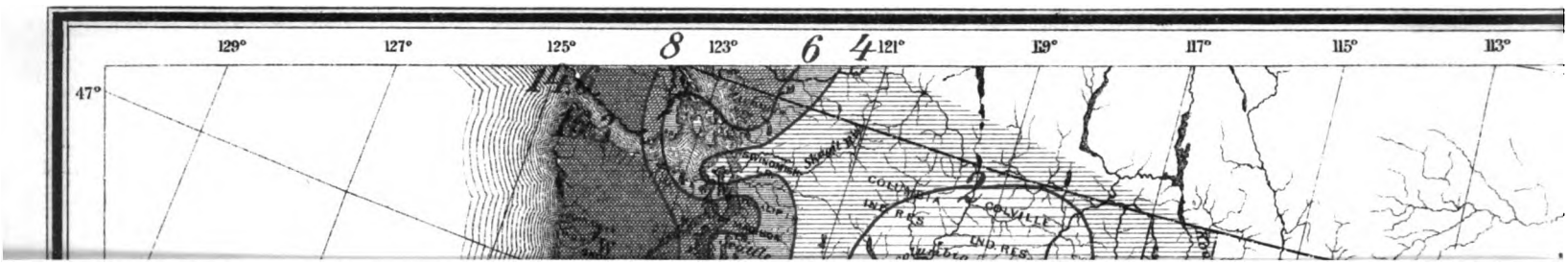

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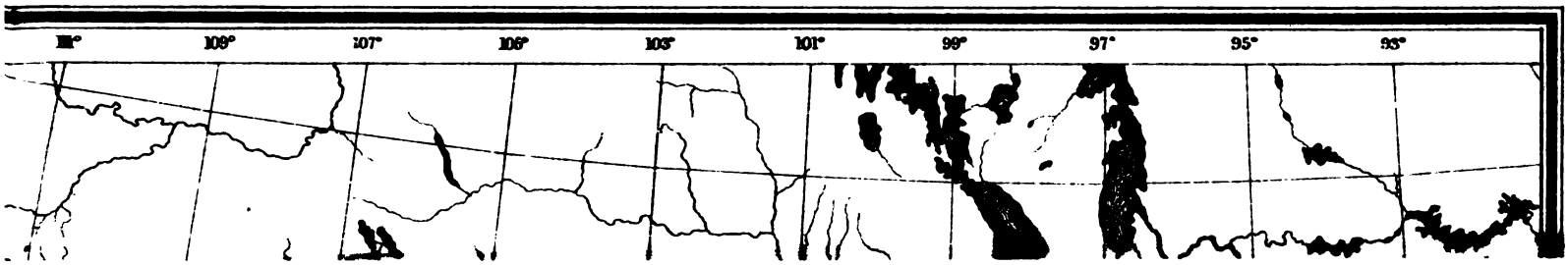

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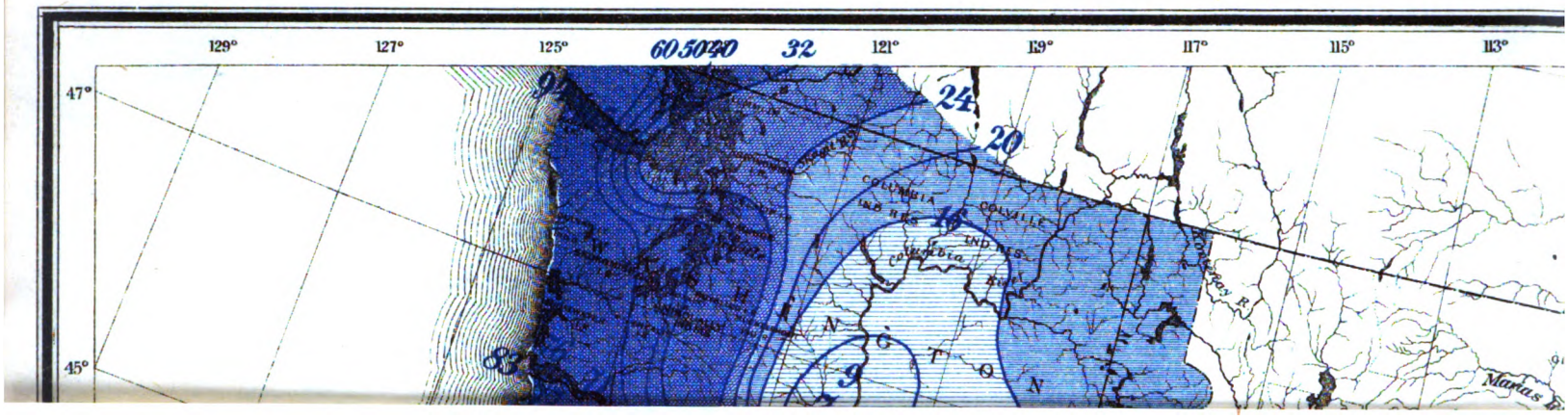

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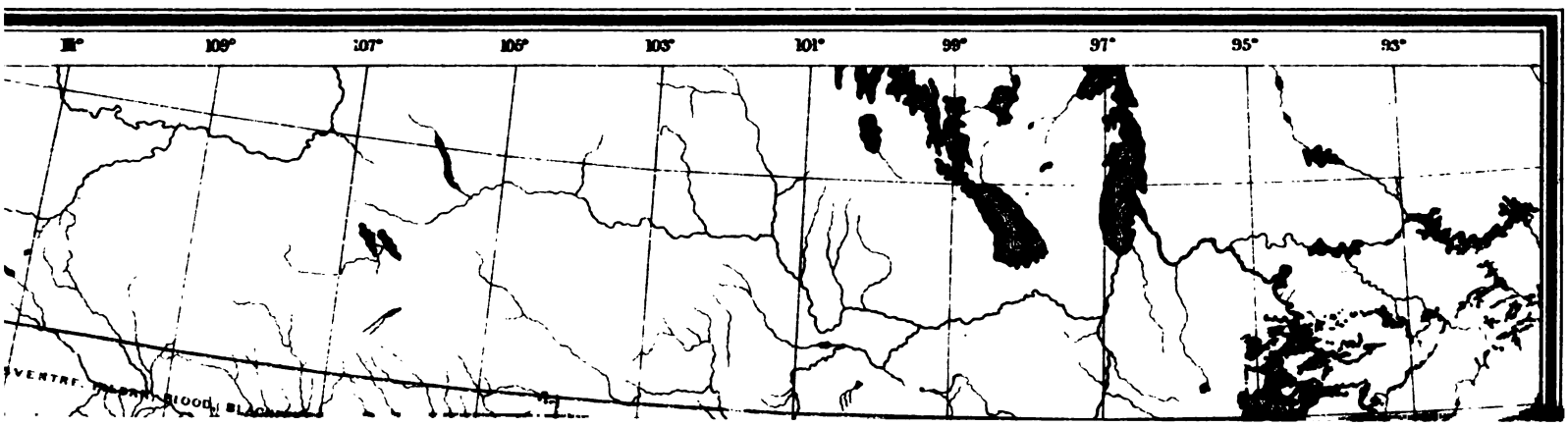
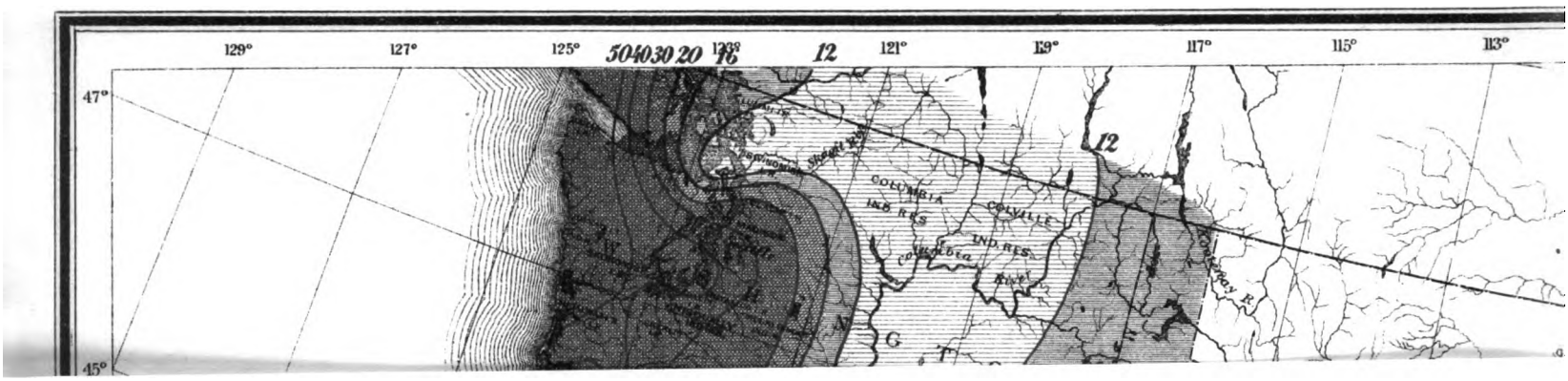
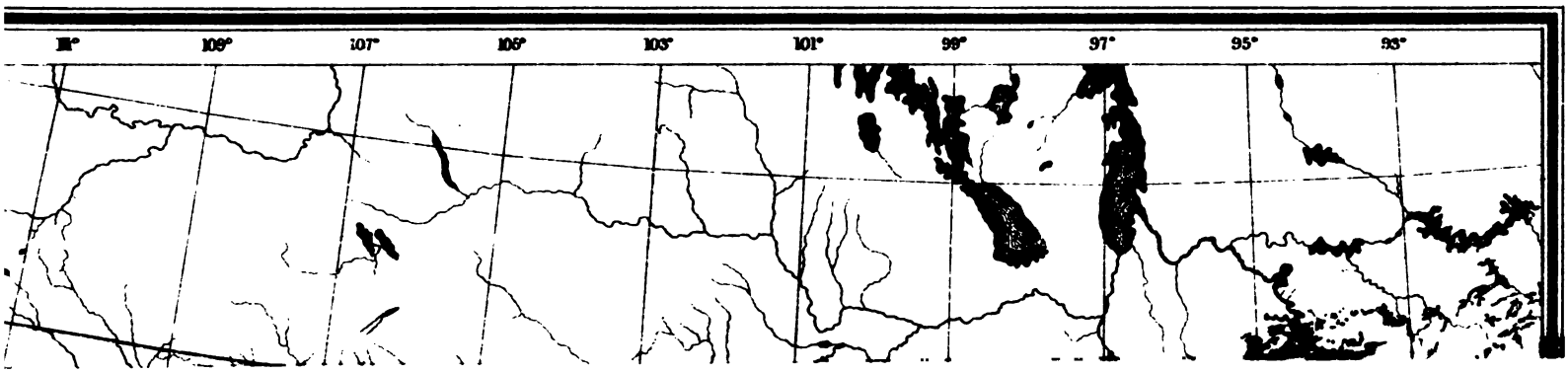


LEAST YEARLY



RAINFALL KNOWN.



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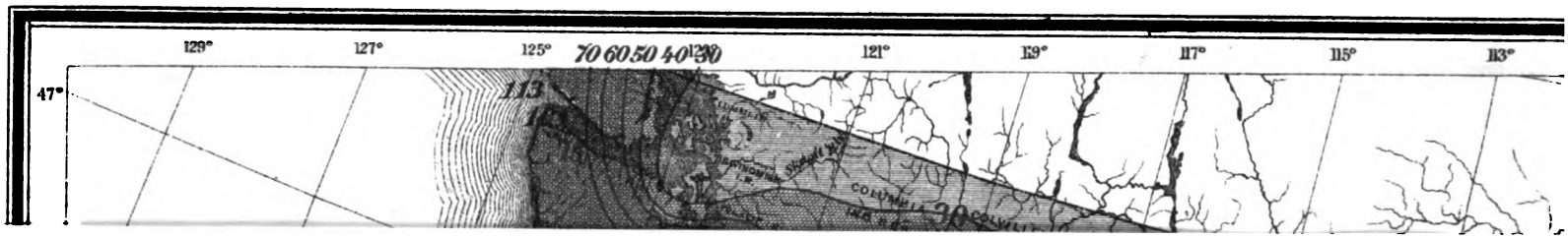

RAINFALL KNOWN.